The Schorstein Lecture

ON

SYPHILIS AND ANEURYSM.

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COULD he have been asked, I am sure the good clinical physician to whom this hour is dedicated would have chosen to keep alive in this hospital which he loved so dearly the tradition of his name by an annual lecture; and he would have felt it peculiarly fitting that the official representative in medicine in his old university, of which he was so devoted a son, and which he remembered so generously in his will, should have been selected as the first lecturer.

Amid the tragedies of professional life two seem darkest—the young man full of hope cut off in the springtime of promise, stricken in the very forefront of the battle as it began, by sepsis, typhoid, tuberculosis or diphtheria. Scarcely less poignant is our grief at the loss of a man who has spent the strong years in gaining for himself a distinguished position, and just when everything has prospered in his hand, and he is entering after the long struggle upon well deserved honours and rewards, the "blind fury" snatches him away. Such was the fate of our friend Gustav Schorstein, the memory of whose service to the profession and to this great charity is to be commemorated in this most appropriate way.

There are those who see only dark clouds lowering on the horizon of the newly opened twentieth century; but already within its first decade we may boast of three achievements of the very first rank, each illustrating in its special way the spirit with which humanity is tackling its eternal problems. The dream—no, the carefully thought-out plan—of Leonardo da Yinci has been realized in the conquest of the air; the final tribute to the enterprise and endurance of man has been paid at the North Pole; and a Sphinx has been forced to break the silence of four centuries.

Syphilis has been one of the great riddles of the race. For generations it shared with malaria the peculiarity that we knew the cure without knowing the exact cause. As prevalent to-day as a century ago, problems of its origin and prevention have remained unsoluble. In one direction our knowledge has widened greatly: it added terror to an already terrible disorder to know that such implacable and cruel foes as locomotor ataxia and general paralysis of the insane, to say nothing of a host of less important affections of the nervous system, were of syphilitic origin. And now, after long years of patient research, the riddle of its origin has been read, and the brilliant work of the much-lamented Schaudinn has opened a new and hopeful chapter in the history of one of the greatest of human scourges. Already the discovery has placed in our hands a means of diagnosis, early and late, which cannot fail to add efficiency to our treatment.

The fact that the germ belongs to the spirochaetes has deepened the wide interest in a group of parasites the enormous importance of which we are just beginning to realize. Already attention has been called to the remarkable similarity in certain clinical features of one of the most representative of protozoan diseases—namely, sleeping sickness—with syphilis, the spirochaetes of which are believed to be very closely related to trypanosomes.

I said that a new and hopeful chapter in the history of the disease had been opened by the discovery of the cause, and a full warrant for such a statement is to be found in the experience of the past twenty-five years with tuberculosis and malaria. Let us ask ourselves, Where do we stand to-day in respect to syphilis? Where is its place in the hierarchy of the infections? The cold figures of the last Registrar-General's report for the year 1907 tell the tale. The great preventable diseases which head the mortality bills are tuberculosis, pneumonia, whooping-cough, influenza, measles, and diphtheria. Syphilis appears low down, credited with only 1,658 deaths. But this is not even a half-told tale. Syphilis kills in three ways and at three periods. Almost without exception the acute infections spare the child *in utero*, but this one takes a heavy toll of the unborn, and we may estimate that of the unnumbered, and as yet unregistered, stillbirths, more than one-half are due to it. The 1,658 deaths in 1907 form a second group; a majority were in children under 5 years of age, but practically all succumbed to the direct lesions of the disease, and this group alone appears in the register under the heading of syphilis. But it is not with syphilis as with other infections, most of which come in sharp assaults, and once defeated the enemy retires; though it sometimes happens, as in typhoid fever, hostile soldiers settle down in a harmless symbiosis, and in tuberculosis it is more often a protracted truce than a final victory.

But the worm that never dieth and the fire that is never quenched express in simile the only too frequent story of the syphilitic infection. And this chronicity and intractability appear to be a special feature of all protozoal disorders. Who can say when a case of amoebic dysentery is cured? Ask an old Mississippi doctor how long it takes to rid the body of the malarial parasite, and he will shrug his shoulders.

The full extent of the ravages of the pox has only been realized of late years, and to appreciate its dignity and rank among the killing maladies we must add from the Blue Book for 1907 a third great group—the 2,332 dead of general paralysis, the 584 dead of locomotor ataxia, half at least of the 1,983 dead of paraplegia, half at least of the 2,279 deaths recorded as softening of the brain, and perhaps a fourth of the motley group recorded as "other diseases of the nervous system." This brings the deaths in England and Wales to above 6,000, and gives syphilis the sixth place in the hierarchy of diseases due to specific germs. And yet we sometimes hear the remark, "syphilis is not a killing disease"!

There remains to be considered another affection, the association of which with syphilis has been long under discussion. There died of aneurysm in Great Britain and Wales in 1907 1,140 persons—199 females and 941 males, the largest proportion coming in the middle period of life. How many of these had syphilis? Is there no way to prevent this large mortality? These questions may now be asked pertinently, since, as I have already remarked, the new researches have led to new methods of diagnosis, and they should enable us to settle once for all the vexed problem of the rôle played by syphilis in producing arterial disease, and more particularly that of the aorta.

Historical Summary.

The story of the association of aneurysm with syphilis takes us very far back and into very good company. There are three periods in the growth of our knowledge. The older begins with a very shrewd observation of the father of modern surgery, Ambroise Paré—I quote from the second English edition (London, 1634, page 287), which is practically the same in the original edition published in 1561: "The aneurismaes which happen in the internall parts are uncurable. Such as frequently happen to those who have often had the unction and sweat for the cure of the French disease, because the blood being so attenuated and heated therewith that it cannot be contayned in the receptacles of the Artery, it distends it to that largenesse as to hold a man's fist; Which I have observed in the dead body of a certain Taylor, who by an Aneurisma of the Arterious veine suddenly whilest hee was playing at Tennis fell downe dead, the vessell being broken; his body being opened I found a great quantity of blood powred forth into the capacity of the chest, but the body of the Artery was dilated to that largeness I formerly mentioned, and the inner Coate thereof was bony. For which cause within a while after I shewed it to the great admiration of the beholders in the Physitions Schole whilest I publiquely dissected a body there; the whilst he lived said he felt a beating and a great heate over all his body by the force of the pulsation of all the Arteryes, by occasion whereof he often swounded."

Vesalius, to whom we are indebted for the first recognition of internal aneurysm, does not mention syphilis as a possible cause; but his contemporary, Fernelius, mentions the coexistence: "Venus vénérien forme des aneurismes dans les arteries."

The Italian physicians at the end of the seventeenth and beginning of the eighteenth centuries were really the first to lay great emphasis on the syphilitic origin of aneurysm. Morgagni, *facile princeps* of clinical pathologists, in Letter LXIV of the *De sedibus et causis morborum*, speaking of sudden death, refers to syphilis as the cause of a great number of disorders of the heart and arteries leading to it; and in the letters descriptive of the diseases of the heart and arteries one is impressed with the frequency with which syphilis is mentioned; and in one place he specifically states that the disease predisposes to aneurysm.

Lancisi, the distinguished Roman physician, whose celebrated work on aneurysm was published after his death, in 1728, went even so far, in his thirty-second proposition, to discuss the signs, etc., by which we may recognize *Aneurysma gallicum*, or the aneurysm due to the French disease, the popular name for syphilis. It is evident from his description that he recognized quite clearly the relation of the two diseases, though neither he nor Paré felt quite certain how much was due to syphilis and how much to the mercurial cure. The writers of the early part of this century gave very little attention to the subject. Neither Scarpa nor Hodgson laid any special stress upon syphilis as a cause; and how completely it had become a negligible quantity is best attested by the scant reference in Broca's large work on aneurysm, 1856, by far the ablest contribution of the period.

The second period embraces the latter half of the last century, during which the subject of visceral syphilis was thoroughly studied. Dittrich, Steenberg, Wilks, Lancereaux, Laveran, and others called attention to the frequency of arterial lesions in syphilis; but it was the medical officers of the British army who forced the recognition of the part played by it in aneurysm upon the attention of the profession. Unfortunately, many of the communications were buried in Annual Reports, which never had the proper recognition, such as the work now receives in the *Journal of the Royal Army Medical Corps*. In 1862 Assistant Surgeon Lewer[1] reported a case of aneurysm of the thoracic aorta in a soldier, aged 25, suffering at the time with secondary syphilis. There were four cup-shaped aneurysms of the arch with cicatricial changes in the vessel. Professor Aiken, of the Army Medical School, in the third edition of his textbook (1866), states that in 26 syphilitic soldiers who had died during four years, 17 presented changes in the aorta, "cicatricial-like loss of substance of the inner coats, small local dilatations of the artery, and in several cases aneurysmal expansions, one as large as an orange, which proved fatal."

A very important communication was that by Inspector-General Lawson,[2] in which he pointed out the great frequency of aneurysm in the army, and its increase at Aldershot from the millesimal ratio of 0.25 in 1860 to 1.68 in 1868. So far as I can see, he was one of the first to recognize clearly the independence of aneurysm of the ordinary atheromatous changes in the arteries. His conclusion is worth quoting:

> It would be going too far to discard the influence of this degeneration altogether, but certainly aneurysm, as I have met with it among soldiers, seems frequently to exist quite independent of that form of disease of the arteries, and destruction of large portions of even the whole three coats may take place by an acute process, and without a trace of atheroma in the neighbourhood.

Myers,[3] while recognizing the influence of syphilis, was not inclined to regard it as a very important cause of aortic disease. But so far as the army was concerned the question was definitely settled by Francis H. Welch, at the time Assistant Professor of Pathology at Netley. Read before the Medico-Chirurgical Society, November 23rd, 1875, his paper[4] remains the most important communication on the subject in English. He dwelt upon the recognition by military medical men of the influence of syphilis in causing vascular lesions, and supported this belief by a study of 34 fatal cases of aortic aneurysm at Netley. The average age at death was 32, the youngest 26. In 5 cases the aneurysms were multiple. In 64 per cent. the arch was involved. In at least 50 per cent. there was a definite history of syphilis. He combated the view that the disease bore any relation to chest constriction, or arterial obstruction, but he emphasized that the groundwork of aneurysm was laid in the aortic disease, and remarked that:

> While no dilatation need ensue under ordinary arterial pressure or such as might be present under civil exertion, yet under the forced exertions, with chest constriction, of army exercises, it would be difficult to understand how such a crippled tube as a degenerate and weakened aorta could resist the extra-internal pressure.

Welch recognized macroscopically the form of aortitis now regarded as pathognomonic of syphilis. It differs, he says, from the nodular form, as the lining of the aorta is thrown into wrinkles with the cicatricial-like puckering and internal roughness. The two fundamental propositions deserve to be quoted, as his study has scarcely received the consideration it deserves:

> 1. That the aneurysmal tumours are associated with, and preceded by, a diseased condition of the contiguous layers of the internal and middle coats of the vessel—as a tissue growth, terminating in degeneration—which, by impairing the elasticity and contractility of the walls, allows of their expansion and dilatation under the tension of normal arterial blood pressure, or this abnormally increased by any cause.
> 2. That these two forms of textural derangement of the aorta are dissimilar in origin and causation; that the limited passive opacity is connected with long-standing diseases of various kinds, inducing a diminished vitality of the system at large; that the structural growth is in the major number of instances associated with syphilis, and in a minor degree with rheumatism and alcoholism, as causations; hence it follows that, or the latter phase is the commencement of that pathological sequence of events under one aspect terminating as aneurysm, the means for the prevention of the aneurysmal tumour must be essentially directed towards the elimination of the special exciting agencies.

These quotations serve to show how completely the army surgeons were convinced of the immense importance of syphilis as the prime factor in the causation of aneurysm. These views did not have a very warm reception. I may be permitted to quote part of a recent letter from Colonel Welch, an old student of this school, who regrets very much that he cannot be with us to-day:

> The only individual who gave me the slightest support in 1876 was Sir James Paget, and since then one or two others have written giving me their experience, but for long after, as could be seen in the narration of annual cases in the professional journals, there was a dead set against my deductions.

Still there were a good many exceptions, and the view has gradually gained acceptance; and in 1894 Goodhart made the strong statement that "It is sufficiently near the truth to say that women never have aneurysm except they have had syphilis." Virchow and others in Germany, Jaccoud, Lancereaux, Verdie, Vallin, Laveran, and Huchard in France, were strong supporters of the syphilitic view. The Dublin physicians, whose contributions to the subject of aneurysm have been so important, described many cases associated with syphilis. Tufnell[5] reported a case of a man aged 19, in the early secondary stage of syphilis, who after a sudden strain felt faint, and had a pain in the abdomen, and shortly after presented signs of an abdominal aneurysm.

Sir Samuel Wilks[6] was the first in this country to recognize the importance of syphilis in arterial disease, and in his well-known paper he described the characteristic syphilitic arteritis of the cerebral vessels, and he mentions that above an aneurysm of the abdominal aorta in a young prostitute were structures resembling gummata. In 1868 Sir Clifford Allbutt studied the histological changes in the arteries in a case of cerebral syphilis, and in 1874 Heubner published his well-known researches.

Naturally the remarkable benefit which followed the use of potassium iodide suggested the syphilitic character of the aneurysmal lesion, a view which was strongly supported by Fournier, Vallin, Verdie, and Bramwell.

The past thirty years have been very fruitful in researches on the lesions of the aorta and their relation to syphilis. I cannot do more than touch upon one or two landmarks in the literature which is given with great fullness by Benda in the *Verhandlungen der Deutschen pathologischen Gesellschaft* (1904), and in Lubarch and Ostertag's *Ergebnisse* (1904). The sum total may be said to be the recognition of a type of aortitis if not peculiar to, at least most commonly found in connexion with, syphilis, and which forms the anatomical basis of a large proportion of cases of aneurysm. Quite recently the definitely syphilitic nature of certain of these lesions has been

demonstrated by the discovery of spirochaetes. Helmstedter,[7] a pupil of von Recklinghausen's, appears to have been the first to recognize that loss of the elastic fibres by rupture and necrosis was the essential histological change at the basis of aneurysm. You will see by these figures in his original paper, which I pass round, the characteristic fracture of the elastic laminae, and the infiltration in places with embryonic cells. In the plate which he gives of the first part of an aorta is figured very well the depressions and grooves which follow rupture and atrophy of the elastic fibres of the media. While he does not appear to have recognized these lesions as due to syphilis, we must give him the credit of the earliest description of the changes which are regarded now as most commonly due to this disease.

In 1875 Köster, discussing the relation of aneurysm and arterio-sclerosis, maintained that a special inflammation of the media, mesarteritis, should be regarded as the primary cause of aneurysm.

In 1877 Heiberg described the miliary gummata in the media, and Laveran shortly after spoke of the islands of embryonic cells as minute syphilitic gummata. The most fruitful contributions were from Heller, of Kiel, who with his students, particularly Döhle, described the sclerotic, cicatricial type of aortitis, with its characteristic macroscopic appearance, as peculiar to syphilis. The microscopic changes were very much those reported by Helmstedter and Köster. The great work of Eppinger, 1887, one of the most exhaustive ever written, and a series of papers by Thoma in *Virchow's Archiv*, emphasized still further the great importance of lesions of the media. Coats and Auld, of Glasgow, made valuable contributions to the histological changes in aortitis. The Scandinavian physicians appear to have long held the belief in the intimate association of syphilis and aneurysm, and the monograph of Malmstens[8] is largely devoted to the sclero-gummatous aortitis which he believed to be specific, and which he found in 80 per cent. of 101 cases of aneurysm.

The most important recent discussion on the subject was at the German Pathological Society in 1903, introduced by Chiari, whose very able study supports strongly the view that syphilis stands in close causal connexion with a *mesaortitis productiva*. Following a very thorough critical summary of the literature, Benda supported this view; and in the general discussion that followed, participated in by a large number of the most distinguished of the German pathologists, the same view was maintained. Only Marchand held that the majority of aortic aneurysms depended upon the common form of arterio-sclerosis, though he did not deny that the sclerotic variety, which he believed was caused by syphilis, also favoured aneurysm formation.

Of more recent papers, that of Aitchison, which appeared in vol. ii of the *Archives of the Pathological Institute* of this hospital, strongly supports the view that there are two distinct pathological processes in the aorta —the one degenerative, characterized by proliferation and subsequent necrosis in the intima, and by degeneration in the media (the ordinary atheroma); the other inflammatory, characterized by round-cell infiltration of the adventitia and media with destruction of the muscular and elastic elements, a mesaortitis which in a majority of cases is of syphilitic origin.

Brockbank, in a study of 182 cases of aneurysm *post mortem*, found 16 in which syphilitic lesions were present in other organs; in 19 additional cases the lesions were suggestive of syphilis. In 87 syphilitic subjects aneurysm was found *post mortem* in 18 cases.[9]

The surgeons of the British navy have from time to time contributed individual reports of cases of aneurysm associated with syphilis, and Fleet Surgeon Bassett-Smith has recently reported[10] the figures from the *post-mortem* room at Haslar—25 aneurysms in 300 bodies.

The subject has entered a third phase in which, with the new methods of diagnosis, the specific nature of the arterial lesions has been demonstrated, and the characteristic serum reaction detected. Several observers—Schmorl, Reuter, Benda, and Klotz—have described the spirochaetes in the lesions in the aorta. J. H. Wright,[11] of the Clinical Laboratory of the Massachusetts General Hospital, has found the parasites in five cases of aortitis, one of which was associated with aneurysm. In a personal communication, he states that he has found the organisms in two other cases. He has very kindly given me a microscopic section, in which I think you will be surprised to see the large number of parasites, though as a rule they were present only in small numbers. Dr. Wright's well-known reputation in this field of research gives to his work a very special value.

With an improved technique the results with the Wassermann reaction have become more and more trustworthy, and its enormous importance in the whole group of late syphilitic affections is now generally recognized. Syphilitics sometimes present two or more of the late lesions in combination; thus the association of aneurysm, and still more frequently of aortic insufficiency, with locomotor ataxia is well known; or a man may have tabes, aortic insufficiency, and aneurysm. The Wassermann reaction has been found in many of these cases. Citron[12] has tested it in 19 cases of aortic insufficiency, 11 of which gave a positive reaction. Of the 55 cases of this lesion examined during four years, there was a definite history of syphilis in 10.9, a probable history in 25.4 per cent. If all those were included with inequality of pupil, or absence of pupil or patellar reflexes, the percentage reached 36.3.

Collins and Sachs[13] have tested the Wassermann reaction in a number of cases of cardiac and vascular disease, which was positive in 5 cases of aneurysm, and in 10 of 13 cases of aortic valve disease. In 6 of 9 recent cases of aneurysm at the Johns Hopkins medical clinic, the reaction was present (L. F. Barker).

Syphilitic Aortitis.

The basic change which makes aneurysm possible is a mesaortitis, which may as a rule be readily distinguished from the ordinary atheromatous process. Macroscopically it presents two important characters: First, it is often localized, involving an area of an inch or more of the tube—very commonly the first part of the arch, with which the valves are often implicated. The coloured frontispiece of the aorta of a young man, in the third edition of Balfour's well-known book on diseases of the heart, which I here show, is a typical illustration. Or there may be a localized patch about the origin of the great vessels or in the descending aorta, just above the diaphragm. With extensive disease of the thoracic part the abdominal aorta may be spared. Penrose has reported from my clinic[14] two typical instances: In a man aged 36, who had syphilis at 19, two circumscribed areas were present, one involving a part of the arch and the valves from which an aneurysm extended towards the right; the other was just above the diaphragm; the intervening portion of the aorta was healthy. Microscopically it showed the typical changes in the media and a nodule of epithelioid cells, which Dr. Flexner thought very suggestive of gumma. The second case, a man aged 35, with a well-marked scar on the penis, was admitted with aortic insufficiency. The lesion was limited to the first portion of the aorta and involved the valves. The rest of the tube was free.

Secondly, the appearance of the vessel differs strikingly from that seen in the ordinary degenerative atheroma. In typical cases the appearance is that now known as cicatricial or fibrous aortitis. The lining membrane is scarred and puckered with narrow linear furrows, sometimes little pits from which stellate lines radiate; very characteristic, too, is the translucency in places due to areas of localized atrophy, so that the bottom of the little shallow depressions presents a bluish tint. There may be an entire absence of the ordinary yellowish raised nodules of atheroma and of the calcified flakes so common in the similar degeneration. As one might expect, in some cases the two processes are combined. But there appears to be a consensus of opinion among pathologists that this type of sclerotic aortitis is characteristic of syphilis. Dr. Turnbull has very kindly placed a series of characteristic specimens on the table.

Microscopically, the changes are very striking. First, alterations are met with in the media, consisting of necrosis, with fragmentation of the elastic fibres, many of which are seen as though cut off sharply. Secondly, a cell infiltration in the media separating the elastic and muscular fibres, and extending between the lamellae in lines, sometimes forming large foci of round-celled infiltration containing giant cells and areas of necrosis. So

dominant are the changes in the media that the process is called mesaortitis. Definite miliary gummata may be present. Thirdly, the adventitia shows areas of cell infiltration, particularly about the vasa vasorum, and spreading into the media along their course. Many of the smaller vessels show the obliterative endarteritis. Fourthly, the intima is in places atrophic along the lineal depression, but more frequently shows compensatory thickening, but there is rarely calcification. And, lastly, the spirochaetes of syphilis have been demonstrated in the sections, and through the kindness of Dr. Wright, of the Massachusetts General Hospital, I am able to show you one of his remarkable specimens. This represents the briefest possible summary of the general features of the syphilitic aortitis. And we may say that the first essential factor in the causation of aneurysm, the groundwork, so to speak, is the weakening of the arterial wall by destruction in places of the media.

It would, I think, be taking altogether too narrow a view of the question to suppose that syphilis is the only infection capable of causing mesaortitis, and so responsible for aneurysm. The researches of scores of observers have shown how common it is to have foci of arterial degeneration in the acute infections. Thus in 52 necropsies in typhoid fever in which the state of the aorta was described, in 30 there were areas of arterial necrosis, 21 of which looked recent (W. S. Thayer).[15] What I think may reasonably be claimed is that the mesaortitis of the type I have mentioned is much more commonly caused by syphilis than by any other infection; and as it is so much more widespread, it naturally is much more liable to be followed by aneurysm.

One of the first lessons of the *post-mortem* room is that the common arterial degeneration, atheroma, does not necessarily lead to aneurysm. On the contrary, any one who has frequented the dead-house of a "sedimentarium," to coin a word, such as "Blocley," in Philadelphia, where the aged poor congregate, comes rather to the conclusion that extensive atheroma protects against it. And we know now that it is not the ordinary senile and pre-senile degenerations, but a special process at the middle period of life, due to the infections, that leads to aneurysm.

How Does an Aneurysm Begin?

Once mesaortitis is present, either in a small patch or in an area of 2 or 3 in. in extent, the aneurysm may arise in one of three ways: First, by acute necrosis and erosion. There exist in the literature a considerable number of cases in which in an aorta otherwise healthy an acute erosion of the coats has occurred, with the formation of an aneurysm. In some of the cases the appearance may well be called the round or acute perforating ulcer of the aorta. I show here three photographs of such cases. It is quite possible that some of these may be syphilitic in origin, as they have occurred in young persons. The edges are irregular, not covered with vegetations. The orifice, measuring from 1 to 2 cm., leads directly into a small aneurysmal sac or perforates directly in the periaortic tissues. Of the cases of which I show photographs one was in a young man of 21, one a woman of 35, and the third a man of 42. In one the perforation took place with the formation of an aneurysm which ruptured into the oesophagus. The other penetrated directly into the pleura, while the third perforated from the abdominal aorta into the retroperitoneal tissues. In the case of the man aged 21 the microscopic appearance is very suggestive of syphilitic mesaortitis. Dr. Klotz has kindly examined for me the edges of the specimen from the woman aged 35, and he thinks the aneurysm and the perforation was probably exogenous, and he takes the same view of the specimen from the man aged 42. In the multiple small cup-shaped aneurysms of the arch rupture may take place through a very small punched-out erosion, usually opening into the pericardium. It may be difficult to determine in a given case whether the perforation has taken place from without or from within. Some of the cases may be mycotic or septic in origin. As sudden death is the rule the condition is uncommon in routine hospital work, and more frequently comes before the medico-legal physician.

Secondly, given the presence of an area of mesaortitis with loss of the elastic resistance of the wall, spontaneously or as the result of strain or effort, the intima over the weak spot may split with the formation of an aneurysm. This view of internal rupture is a very old one, but one had a somewhat hazy idea of what was meant until we found how it could be produced experimentally over an area of degeneration of the media caused by adrenalin. A clean-cut fissure of the intima may lead directly into a small aneurysmal pouch, as in this drawing of the aorta of a rabbit from Fisher's paper,[16] which shows this method of formation of aneurysm very clearly. The acute mesaortitis met with in ulcerative endocarditis and septic conditions may show these splits and fissures in a most remarkable manner. I show photographs of an aorta, the specimen of which is in St. Bartholomew's Hospital, taken from a boy aged 6½, a patient of Dr. Jordan. Following an attack of otorrhoea, headache, and synovitis of one knee, lasting for about three weeks, with a temperature of 103°, while convalescent and up and about, laughing and playing, the boy suddenly turned pale and died. The small aneurysm of the aorta had ruptured into the pericardium. Corresponding to it, the intima showed a triangular tear with sharp edges. There may be on the arch three or four of these small sacs, each one showing a clean-cut split of the intima. In what was perhaps the first case (according to Eppinger) in which the mycotic character of an aneurysm was recognized I found four in the arch in connexion with ulcerative endocarditis. There are a good many cases now in the literature, and I pass round a photograph of one which I have examined at the museum at McGill College, and which has been reported by Dr. John MacCrae.[17]

There are cases with more extensive tears of the intima and inner layer of the media, which may lead to rupture of the aorta, or to dissecting aneurysm, or which may heal completely. It is in connexion with this special mode of production of aneurysm that strain plays so important a rôle. What we mean by strain is a sudden muscular effort by which the blood pressure in the aorta is suddenly heightened. One cannot but be impressed with the extraordinary frequency of the history of a sudden muscular effort, followed often directly by pain in the chest, which passes away gradually, and then a few weeks or a month later the signs of aneurysm appear. Take such a case, for example—a case already referred to by Tufnell. A young man aged 19, in the early secondary stages of syphilis, was shoving up a side of beef, but it came back on him so that he had to let it down. He tried again and again, and at last succeeded. He was faint and tired, and soon felt a severe pain in the abdomen. Shortly after he developed a large aneurysm of the abdominal aorta. In this, as in most of these cases in young persons, the sequence of events is: a specific aortitis with weakening of the media, a sudden exertion, a split of the intima over the weakened spot, and the gradual formation of an aneurysm. Whether a perfectly normal intima and media ever split has been questioned, except as the result of direct trauma. Dr. Turnbull has shown me a recent specimen in the museum which he has placed here for your inspection, in which there was an extensive tear of the intima in a middle-aged woman, with formation of a dissecting aneurysm, and death after about a week. The edges of the clean-cut tear certainly do not show any very serious change in structure. In going over this specimen, I put the new system in vogue in the pathological department to a test. I asked for a slide of the edge of the tear, and the histological description, both of which were immediately forthcoming. A very interesting point is that these splits may occur in a perfectly normal-looking vessel, as was the case in the abdominal aorta of George II, in whom this type of lesion was recognized for the first time by the well-known anatomist Nicholls.

And the third and very common mode of production of aneurysm is weakening of the aortic wall, localized or diffused, followed by a gradual dilatation, either involving a large area of the tube, sometimes the whole tube, but more frequently a localized area. This dilatation form of aneurysm is readily produced experimentally, and the aorta of a rabbit treated with adrenalin may show a dozen or more saccular pouches. It is a not uncommon form in the syphilitic aortitis, in which one may see three or four small cup-shaped pouches, often at the root of the aorta, the intima extending into a little sac. In the star-shaped scars the linear fissures and depressions are covered by intima, and the bluish

translucent appearance is due to the loss in great part of the elastic and muscular elements of the media. But this type of aneurysm is most characteristic of the ordinary degeneration, the senile or presenile atheroma, in which the entire arch, or even the whole aorta, may be diffusely dilated, or in local areas there are flat, saucer-like dilatations of the coats, associated with advanced degeneration, fatty and calcareous, of both media and intima.

Statistics.

There are many interesting problems concerning the incidence of aneurysm in different countries under different social conditions and among known syphilitics. I do not propose to inflict many figures upon you, but there are a few worthy of attention. The general mortality I have already given. About 1 in 459 deaths are returned in England and Wales from aneurysm, and the proportion of cases has not varied much from year to year. Until recently we have had little or no information upon the question of how many of the deaths among syphilitics are from aneurysm. In a recent study by Alexandre[18] the figures are collected particularly from the reports of the insurance companies. Among 3,658 deaths in connexion with the Widows' Fund Insurance Company, there were only 24 from aneurysm, and only 2.2 per cent. could be attributed to syphilis. Blaschko, quoted by Alexandre, in 5,574 deaths found that 5.2 per cent. could be attributed to syphilis. These figures probably represent two extremes among the better class of people who take out life insurance. As to the relative number of known syphilitics who die of aneurysm, there are a few statistics available. In Blaschko's series of 150 deaths, only 4 died of aneurysm. Of 487 cases in Goolmer's statistics, quoted by Alexandre (of Gothaer Insurance Company), known to be syphilitic at the time of insurance, 13 died of aneurysm of the aorta; 28 per cent. in all cases died of definite syphilitic disease. In 87 persons with positive syphilitic lesions at the Royal Infirmary, Manchester, aneurysm was found in 18—that is, 20.6 per cent. (Brockbank).

It has long been known that the incidence of aneurysm varies very greatly in different countries. The *post-mortem* returns are the most accurate. Among 19,300 necropsies at Vienna, von Schroetter[19] gives 230 cases of aneurysm (1 in 83), and E. Müller,[20] among 10,360 necropsies, gives 183 aneurysms. The Leipzig figures for three years are given by Briesemester,[21] 3,037 necropsies, 50 aneurysms of the different arteries. These three give a fair average for Germany. At Guy's Hospital,[22] among 18,678 necropsies, there were 325 aneurysms (1 in 57), a very much higher percentage than the German figures. At this hospital, in 3,467 necropsies—January, 1907, to October 1st, 1909—there were only 31 cases of aneurysm. One reason for the small number is the large proportion of children. At the Johns Hopkins Hospital, among 3,100 necropsies, 99 aneurysms were found (1 in 31), an extraordinarily high percentage in comparison with the German figures, and nearly double the percentage of those in Guy's Hospital.

Professor Allen has sent me the figures from the Melbourne Hospital. Of 46,878 patients admitted for the ten years ending June 30th, 1905, there were 298 cases of aneurysm.

Leonard Rogers, of Calcutta, has very kindly had analysed for me the *post-mortem* records of the Calcutta Medical College for the last thirty-five years. There were only 30 aneurysms in 5,900 bodies (1 in 196), 0.05 per cent.

We now come to the interesting question as to the percentage of cases of aneurysm with a syphilitic history. Haphazard figures, collected without special reference to the condition under survey, are fallacious. The profession has had a sharp and useful lesson in locomotor ataxia and general paralysis. How far have we travelled since Erb's paper at the International Congress in 1881 forced us to consider the connexion of these two diseases with syphilis? The studies of Fournier, Gowers, and others show that the more carefully the past histories of tabetics and paretics are inquired into the larger the percentage of those found affected with syphilis.

It is the same with our study of aneurysm. I shall not quote the old figures, which may be found in any textbook, and in which the ratio ranges from 40 to 85 per cent. I propose to give you my own personal experience. Of 31 cases of aneurysm of the aorta seen in private, in 3 no mention was made of syphilis, in 10 syphilis was denied, while in 18—that is, in 58 per cent.—there was a positive history. At the Johns Hopkins Hospital aneurysm is a very common affection; during the twenty years ending May 16th, 1909, there were 386 admissions for aneurysm among 24,363 admissions to the medical wards. A very large number of these were readmissions, which reduces the total number of cases to 248, which have been picked out and analysed for me by Dr. W. T. Parsons.

There were 204 cases of aneurysm of the thoracic aorta, 23 cases of aneurysm of the abdominal aorta, 3 cases of aneurysm of both thoracic and abdominal aorta, 4 cases of the mesenteric artery, 1 of the thoracic and innominate artery, 6 of the innominate artery, the balance of the axillary, carotid and femoral arteries. It may be mentioned that in these same series there were 3 cases of aneurysm of the heart.

Of the total number of cases of aneurysm, 101 had a well-marked syphilitic history—40.9 per cent. Taking the thoracic aneurysm alone, of the 204 cases, 83—that is, 40.6 per cent.—had had syphilis. Compared with some other figures, this represents a low percentage of syphilis cases, but we know how difficult it often is to get a satisfactory account from the patient, and the histories are very often defective, and only those with very clear accounts of the disease were included. Among 9 recent cases in which the Wassermann reaction was tested, it was positive in 6.

The comparatively large proportion of cases of aneurysm at the medical clinic of the Johns Hopkins Hospital does not necessarily mean that syphilis is more prevalent in Baltimore than elsewhere. Two causes may be mentioned: the hospital is a consulting centre for a very wide extent of country in the southern and western portions of the United States, and the proportion of negroes is large. The ratio of coloured to white in the aneurysm series is about 1 to 2.6, while the proportion of white to coloured in the wards in about 5 to 1. The incidence of syphilis in the coloured population is high, and many of the men have very hard work, necessitating sudden effort and strain.

Clinical Features.

In a great majority of all the cases the clinical features are those which we recognize as in ordinary aneurysm, but there are a few peculiarities deserving of special consideration. As pointed out by Morgagni, arterial syphilis is a common cause of sudden death. It is, *par excellence*, the unsuspected aneurysm, the aneurysm without either symptoms or physical signs. The most frequent site of perforation is in the first portion of the aorta, usually in one of the small cup-shaped sacs. The literature is full of cases of this type. The perforation may take place in any part of the aorta, and from a very small orifice. I have already alluded to the possibility of certain of the cases of acute perforation of the aorta being the result of a rapid necrosis and softening of a large focus of mesaortitis.

It is a common type of aneurysm of cerebral arteries, and a frequent cause of sudden death with symptoms of apoplexy. In Beadles's[23] study of the 555 cases of cerebral aneurysm recorded in the literature no special mention is made of age or of the relation to syphilis, but it is very suggestive that in 46.3 per cent. the patients were in apparently good health. One half of the 12 cases of cerebral aneurysm which I reported were probably syphilitic. One of the cases, a man aged 36, who was in perfect health at the time of the rupture, had had a hard chancre eighteen months previously; extensive disease of the basillar artery was present.

In Bradford's[24] case, in which a very similar fusiform aneurysm existed in the basilar artery, in a man aged 29, who died suddenly, numerous gummata were found in the liver.

A second peculiarity is that it is the aneurysm of the third and fourth decades. Welch referred to this in his series of 34 Netley cases; the average age was 32. Of course the army is made up largely of men under 40, but in looking over the specimens in the museum of the Royal Army Medical College, Millbank, one is impressed with the youth of the subjects from which they have been derived. Of 44 cases of aortic aneurysm in which the ages were given, 15 of the soldiers were under 30, and 36 under 40 years of age. In the Johns Hopkins Hospital series there were 89 patients under 40 years, and 159 above that age.

Moreover, in young and middle-aged men the syphilitic form often presents a triad of symptoms—angina pectoris, aortic insufficiency, and aneurysm. This special type of syphilitic mesaortitis is very prone to affect the root of the aorta, and I have had a very interesting group of cases, some of which I have reported,[25] in which the very first symptoms were severe attacks of angina pectoris. Gradually under observation aortic insufficiency has supervened, with the signs of aneurysmal dilatation. In some of the cases the insufficiency has been induced rapidly enough to cause great cardiac dilatation, and months have elapsed before the cardiac equilibrium was restored. This is just the group of cases of aortic insufficiency in which it is not always easy to say whether aneurysm co-exists.

And the last and most suggestive feature is the prompt relief which may follow the use of potassium iodide. Since its introduction by Bouillaud, few remedies have stood the test of time more satisfactorily, particularly in the cases of young men with a well-marked syphilitic history. The prompt disappearance of the anginal pains, the improvement in the local symptoms, the diminution under observation of the aneurysm itself, and in rare instances a complete cure, are within the experience of all of us. Particularly is this the case in the group with the triad of symptoms just mentioned. I see at intervals two patients, both old syphilitics, one of whom has had a large sac growing to the left of the sternum for eight years; the other, after very severe symptoms of chiefly dyspnoea and venous obstructions, has been very comfortable for more than five years. The type of sac is very apt to be just the form in which obliteration is most likely to occur, the one with the narrow neck, and, once consolidated, no further trouble occurs. More than once I have referred to the case of a soldier discharged for aneurysm after the Crimean war. Twenty years later we found a completely healed aneurysm of the terminal portion of the arch, and a perfect double aorta, the result of complete healing of a dissecting aneurysm.

CONCLUSION.

The practical question remains, What can we do to restrain the ravages of syphilis, and so reduce the proportion of deaths from aneurysm and other diseases directly due to it? At a low estimate, we may place the mortality at between 6,000 and 7,000 annually, about 1 in 80 of the deaths, not taking into account the unestimated and very large number of stillbirths. In about one-seventh of the cases the deaths are due to what we regard as the more direct effects of the disease; aneurysm and the enormous group of affections of the nervous system represent later, but none the less definite, effects of the poison. The Wassermann reaction and the detection of the spirochaetes gives an entirely new aspect to the disease, and obliterates in great measure old distinctions and divisions. There is only one syphilis, one and indivisible, with many manifestations.

The discovery of the cause is the first step towards successful measures for the prevention of an infectious disease. So far as venereal disease is concerned our attitude has been one of hopeless inactivity, partly owing to inherent difficulties, partly to a lack of courage. The innate difficulty relates to the problem of controlling one of the two great primal appetites. No measures yet devised have successfully restricted illicit intercourse between the sexes. Prostitution, the blackest blot in our civilization, exacts a ghastly toll of suffering, and a sacrifice annually of thousands of lives. Add to the 6,000 or 7,000 slain by the spirochaete the thousands maimed and killed by the gonococcus—a David among cocci—and the sum total debited the venereal infections reaches figures only behind those of tuberculosis, pneumonia, and cancer. Too deeply entrenched in the very citadel of our social fabric for a frontal attack, the lessons of other successful campaigns must be conned, and long years of training must be undergone before we can hope for a truce, to say nothing of victory. There are four lines of attack possible. The first is a wholesome and healthy education of our youth in matters sexual, pointing out plainly the necessity of continence, though a hard condition; the really terrible risks, and the sad train of events likely to follow an infection. Secondly, steps should be taken to lessen "the sight of means," as the proverb puts it, the open, flagrant whoredom which makes the streets of this city, for example, a byword among the nations. In other capitals vice has deliberately to be sought, here it jostles our youth in most seductive form at every turn, to the great peril of even "a fugitive and cloistered virtue." It is no wonder that so many yield, "Knowing not" (or for the moment forgetting) "that the dead are there," and that he "goeth down to the chamber of death." A special police force of men and women could in a year clear the streets and places of public amusements. Such a measure *alone* might only "skin and film the ulcerous spot," as no doubt it does in Paris, where Bizard[26] estimates that one million men visit annually "les Maisons de tolérance" and "les Maisons de rendez-vous"!

Thirdly, venereal diseases should be put in the same category as other acute infections of public danger, and every case should be known, registered, and supervised. Chimerical, futile, visionary, impossible! Yes, so it seems, and so it is to-day; but twenty years ago how wild and fanciful we thought the notification of tuberculosis!

And, lastly, much may be done to lessen the ravages of the disease by increasing everywhere the facilities for early and prolonged treatment. The new methods of investigation have raised a hope that—perhaps at the very outset, at the portal of entry—the disease may be jugulated. Time will tell. Like other protozoal affections, syphilis displays an obstinacy and chronicity that has made some authorities doubtful of the possibility of a final cure. On this question I have always pinned my faith to the greatest of British syphilographers—that special ornament of your school, Jonathan Hutchinson—sharing his belief in the permanent curability of the disease. I have been long enough in the profession to see the children's children of syphilitics hale and hearty, with no taint left in stem or branch; but unhappily this is not always the case, and unless the treatment is thorough and prolonged recurrences are only too common, and the Registrar-General's report indicates in how many thousands it is still inefficient.

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AN exhibition of working models of sewage distributors and sprinklers shown in action has been opened in the Parkes Museum of the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., and will be continued until the end of next January. The museum is open daily from 9.30 a.m. till 5.30 p.m., and on Mondays till 8 p.m.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held at the Whitehall Rooms, Hôtel Métropole, on November 20th, under the chairmanship of Mr. C. F. Rilot. The toast to "The Hospital and its School" was proposed from the chair, Mr. Rilot in the course of his remarks alluding to the resignation by Mr. Colyer of the post of Dean, who during his tenure of office had done the school most excellent service, his compelling personality giving a healthy and invigorating impulse to the whole of its work. In order that the hospital Gazette should attain a full measure of success it should, Mr. Rilot said, be supported by old students. The toast was acknowledged on behalf of old students by Mr. E. A. Mansell, and on behalf of present students by Mr. W. L. Jackson, who stated that some twenty-five of his fellow students had joined the Territorials, and that the formation of a rifle club was under consideration. Mr. Dolamore, the new Dean, speaking to the same toast, gave an account of the existing conditions of the school. The present was the fiftieth anniversary of the foundation, and all those who had preceded him in the office of Dean were still alive. There were now 160 students on his books. The evening was brought to a close by the singing of "Auld Lang Syne."

The FitzPatrick Lectures
ON
GREEK MEDICINE IN ROME.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

BY

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PRESIDENT AND FELLOWS,—As Coleridge said of Greek literature so of Greek medicine, it was "a superfetation upon, and not an ingredient in the national character." The first physicians to wend their way to Rome were among those who we know were employed about the gymnasia and the arena.[1] But on the common knowledge of the standard histories, the *trita scholarum*, I will forbear to dwell. Archagathus arrived in Rome about 220 B.C., some twenty years after the Punic war for the cornlands of Sicily. He was one of the first to feel the brunt of Roman indignation at the blasphemy of mistrusting the protecting gods, and at the impiety of supplanting the tried resources of the Penates. Was it only this prejudice which turned his title of "Vulnerarius" into that of "Carnifex"? Was he so barbarous a surgeon, or was this story only Pliny's fun? For, on the other hand, he certainly was accepted as a Roman citizen, and a *taberna* was assigned to him at the State expense in the city near the Forum Marcelli. Whether or not he was subsidized as a public physician—δημοσιεύων—after the Greek fashion, is an interesting question; for if so, as we shall see later, this office must in Rome itself, though not in the provinces, have fallen soon into desuetude.

Passing from Archagathus over obscure names and traces, I would concentrate our attention, in respect of the effective invasion of Rome by Greek medicine, upon the great name of Asclepiades. It is one of the flouts of time that the reputation of this great physician had fallen, not only into neglect, but even into obloquy; and the belated duty of restoring his name and place, after the lapse of nearly two thousand years, to their merited honour has been reserved for our own times. I say after nearly two thousand years because, although Asclepiades was born somewhere between 130 and 124 years before Christ, and thirty years later was famous, yet his fame suffered no eclipse until the star of Galen arose; then the torch of Asclepiades was quenched. Never a voluminous writer, his works, scarce by the fourth century, by the sixth century were lost; so that his reputation was at the mercy of any idle scribbler whose malice was thus placed beyond direct confutation. Something like the same neglect befell Celsus, whose treatise on medicine was also practically lost until the fifteenth century, when it was rediscovered, as it is said, by that respectable Pope Nicholas V. The facts, according to Sabbadini, are that the first and less correct MS. was found at Siena by the humanist known as Il Panormita; the next and better one came to light soon afterwards in the Ambrosian Library. Portions of Celsus, however, had probably survived also in the obscurity of monkish closets. The work was not printed until 1478, at Florence. It is interesting to us to note that Politian took some pains with the text of Celsus, and that among those who attended his lectures were Grocyn and Linacre.[2] But Celsus was a Roman gentleman and a layman, whose treatise on medicine did not arouse any jealousies, and whose credit was safe with his own coterie. The spiteful arrows of Pliny were shot elsewhere. Neglect, therefore—unmerited neglect—might, and did, overtake Celsus, but not contumely.

It may be that this earthly orb, when it judges, judges securely; but it takes an unconscionable time to consider its judgements, and too often meanwhile this loss of documents arrests the course of its justice. Six hundred years ago, when the path of secular knowledge was the path to persecution or to the stake, flourished, or tried to flourish, Roger Bacon, the friend of Grossetête and Adam Marsh, one of the most masterly spirits of any time or people, and one of the boldest and most unfortunate champions of the emancipation of the human mind. Yet last year the historical school of his own university knew no better than to represent Bacon publicly as a buffoon. So much for humanism. And if this be true of modern history, what may we expect concerning the submerged scientific geniuses of two thousand years ago? Now I will not compare the memorable talents of Asclepiades, whose reputation for something like this interval has been under eclipse, with the genius of Bacon; nor the career of that favourite of kings and harvester of fees with the bitter bread of captivity and the ironical denial of the currency of the pen to the bounty of an unconquerable mind; yet, had Asclepiades been a smaller man than in fact he was, for the sake of historical truth no inconsiderable measure of justice would still have been his due.

Asclepiades may remind us in many respects of Boerhaave. In the one case and the other affable manners, good fortune, and worldly success threw a glitter of vulgarity over a career of rich practical and philosophic attainments, versatility of mind and temperament, rapid clinical perception, and sagacious insight into the conditions of health and disease; these were the endowments of both men, and in them approached, if they did not quite amount to, original genius. We meet with the curious coincidence that, in his first dissertation, Boerhaave also occupied himself in part with the philosophy of Epicurus. To Boerhaave ingratiating manners, elegant accomplishments, and popular vogue and fortune became no reproach; but in Asclepiades these qualities have been construed into sycophancy, sophistry, chicanery, and avarice.

It may be said that Asclepiades lived a long time ago; that his contemporaries knew him better than we can do; or, anyhow, that there is no use in worrying over dead issues and obsolete reputations. We shall see, however, that Asclepiades occupies not only a high, but a cardinal, place in the history of medicine. Broken as are the lights in which for us he stands, yet his is the first figure which stands forth under any illumination since the dispersion of the greatest schools of Greece. The great names of Herophilus and Erasistratus are but shadows. Again, in so far as history is, or is to be, a science, or even morally true, no fact is to be taken of its apparent dimensions. Now the cardinal moment at which Asclepiades flourished was that of a new outpouring of Greek philosophy and medicine into the alien air of Rome. The meaning of his career contains, therefore, much of the meaning of the age in which he lived, and of which he was a type; and, if the report of his contemporaries were coloured by envy or prejudice, our view of the period and of the course of the history is so far perverted. We must weigh the value of each witness, and compare the witnesses one with another, remembering that *calumniare audacter, semper aliquid haeret*. Moreover, we must not give too much latitude to the word "contemporary."

About 130–124 B.C., then, Asclepiades was born, at that interesting city Prusa, in Bithynia; so that he was about a generation older than Lucretius. His name indicates that his family had some connexion with the medical calling. But the name was no uncommon one; of his time fourteen persons are known to have borne it, and it seems the physician, himself an eloquent man, was confounded with another Asclepiades, a rhetorician; whence arose Pliny's spiteful legend that, having found rhetoric unprofitable, Asclepiades had turned to medicine with a sophist's adroitness and the ignorance of a layman. But, to rectify our definition of a contemporary, it was about seventy years after the death of Asclepiades that Pliny was born; and the prudent Celsus, who lived a little earlier, though none too willing a witness, says of him that "*Medendi rationem ex magna parte mutavit.*" Asclepiades has suffered the more in reputation with modern English scholars as Greenhill, lately the honoured friend of some of us, and in medical history the revered teacher of us all, in my opinion and that of others, accepted too readily the irresponsible invective of Pliny, and the current estimate founded upon his testimony, reinforced by certain strictures of Celsus and Galen which were animated by controversial strife, not by moral censure. With such doctrinal differences, and the schisms which gave rise to them, I will deal presently. Suffice it to say now that for Asclepiades

medicine was no afterthought; from his youth he was educated for our profession. In Wellmann's[3] opinion he was not only thus educated at Athens, as we now know, but probably at Alexandria also. It was from Athens that he brought to Rome a theory of medicine founded upon the atomistic philosophy of Democritus, then passing under the name of Epicurus, and soon afterwards to be transfigured in the shining car of Lucretius.

As in England the adverse view of the life and doctrine of Asclepiades received the sanction of Greenhill, it is from him that I must curtly present it. In his well-known article in Smith, Greenhill says, "Asclepiades may fairly be characterized as a man of natural talents, acquainted with human nature, or rather with human weakness, possessed of considerable shrewdness and address, but with little science or professional skill. He began (upon the plan which is so generally found successful by those who are conscious of their own ignorance) by vilifying the principles and practice of his predecessors, and by asserting that he had discovered a more compendious and effective mode of treating disease *than had been before known to the world.* [Italics mine.] ... He directed his attacks more especially against the writings of Hippocrates." Greenhill then proceeds to argue that the methods of Asclepiades owed their popularity to his assiduous attention to everything which contributed to the comfort, flattered the prejudices, and indulged the inclinations of the luxurious classes. "We cannot fail," he adds, "to recognize in Asclepiades the prototype of more than one popular physician of modern times." This is tolerably scathing; and I suspect the distinguished critic, who was better versed in medicine than in philosophy, was not indisposed to use this parable of Asclepiades for the chastisement of certain professional vices of his own times. Dr. Withington, who may be said to represent opinion as now prevalent, with a more even verdict but still with an ironical pen, sides, on the whole, with Greenhill. He, too, is not unnaturally angry with Asclepiades for his revolt from Hippocrates. Nevertheless, during the last century there were not a few writers to take a more respectful view of Asclepiades, both as to his virtue and ability. The first scholar to qualify my own estimate of Asclepiades was that brilliant friend of my youth, Maurice Raynaud, snatched so prematurely from his friends and from medical science.

At a much later date, some half-dozen years ago, a tract by Dr. v. Vilas came into my hands which made a radical alteration in my estimate of Asclepiades. It may be true, as Max Wellmann says, that v. Vilas was not sufficiently equipped with learning to do full justice to his theme; still Wellmann's standard is a high one, and a pioneer such as v. Vilas may on a humbler scale deserve very well of us. He put his points well, and supported them with no inconsiderable information. Moreover, he did the reader the service of putting him in the way to discover the earlier literary testimony. M. Albert also, in his *Les Médecins Grecs à Rome*, has given a balanced and better-informed estimate of the place due to Asclepiades; and Fuchs (in Pagel) and Neuburger (the latter especially, whose work I had failed to consult until this lecture was under correction) have dwelt more adequately on the evidence for a far different interpretation of his character and talents; yet even these authors realize imperfectly the weakness and bias of the persistent detractions. *Aliquid haerebat.* The last and most convincing vindication of the place of Asclepiades in history is the essay by Wellmann to which I have already referred.

Without claiming for Asclepiades a measure of magnanimity far beyond the easy standard of the age in which he lived, we shall remember, nevertheless, the gross licence of backbiting and invective then tolerated, nay, even customary, in Rome. Of this extravagance we see colossal examples in the forensic orations of the time, even in those of men as cultivated and humane as Cicero; and in cases where we have better means of knowing the truth than remain to us in the instance of Asclepiades. Moreover, in the latter days of Athens and Alexandria, Hellenism, settling on its lees, had become more and more artificial and disputatious, more and more charged with schismatic animosities. In these passions of opinion reputations were indiscriminately devastated.

It is narrated of Asclepiades that one day, passing along the street, he saw a body stretched upon a bier, on the way to burial. He interfered, perceived some sign of life in the body, and applied restoratives; the supposed corpse quickened, and the man was made whole. The multitude acclaimed Asclepiades as a god—to the annoyance, no doubt, of rival practitioners. This story is used in building up the accusations of charlatanry against the too lucky physician. But we know nothing of the circumstances which led Asclepiades to intervene, nor do we know how he carried himself under the adulation. What we do know is, that to expose the sick and dying on the highways for the chance wisdom of the passers by was an ancient and familiar custom. Moreover, we know, from a passage in Galen, that Asclepiades, as Herophilus before him, had devoted especial attention to the pulse.

Another, and I think the only other, evidence alleged for the charlatanry or wily complaisance of the Greek is that in a time of growing luxury he made his therapeutical means also luxurious; that he laid aside coarse and drastic remedies for gentler means—for regimen, baths, diet, exercises, and so forth; and that he introduced these changes in Rome with the manners of Boerhaave and Mead rather than of Radcliffe and Abernethy. But it seems not to have occurred to historians to consider whether these mitigations of practice were supple concessions to a voluptuous generation, or were consistent with a new and revolutionary doctrine, not of his own invention but a fountain from the Alexandrian stream of thought, which drew upon him the hostilities and revenges which pursue innovations and innovators. That Asclepiades should have lifted up his voice against the sacred head of Hippocrates has made all historians, from Celsus to Dr. Withington, righteously indignant; and not without some reason. The leader of the Hippocratean school had seen certain aspects of pathology with the eye of genius; Asclepiades saw another—a smaller side, if you please, but not fictitious. Yet there is no evidence that his opposition to Hippocrates, as construed by the Dogmatists, was embittered by personal acrimony; it seems to have been in the form of argument, and of sarcasm pointed by epigram. It is indeed a little curious that he should have called the Hippocratean[2] expectancy a study upon death (*θανάτου μελέτη*), seeing that his own movement had been from dashing therapeutics to more rational and temperate methods; but this very discrepancy seems to mark his polemic as petulant rather than impious, while Galen's arrant teleological convictions were outraged by the flippant quip that Nature was as ready to kill a man as to cure him. But in moments of temper have not some of the modernest of us said the like?

The fragments of Asclepiades, who is quoted by about thirty-three authors in various fields, in which passages moreover ten more references are embedded, were collected by Gumpert in 1794. The chief sources, however, are only four, namely, Celsus, Pliny, Galen, and Caelius Aurelianus; and of these Caelius Aurelianus is the most important. Unfortunately, such has been the ill luck of Asclepiades, that for many generations the writings of Caelius Aurelianus were lost, or concealed under corruptions of his name. By the same misfortune, much of our knowledge of Soranus, and of the history of the sect of the Methodists, lay long in obscurity.

A modern writer on medical history has made the interesting remark that as celestial bodies, while themselves invisible, may in some measure be recognized by their influences upon the paths of the bodies visible, so phases of the past of which, as in the case of Alexandria, the records are lost, may in some measure come into our ken by certain otherwise unaccountable deviations of recorded periods. We must endeavour, then, to calculate from the orbits of medical thought and practice which we can plot out, those influences which, in the absence of records, may give us some notion of the history of medicine during the blank period between Hippocrates and Asclepiades; and for a moment I must revert to the geographical aspects of the problem.

We have seen that before and during the period which we may briefly call the Homeric the western seaboard of Asia Minor was not Greek; it was an outlying border of an inland power then strong enough to hold it against western encroachment. Miletus, for example, was for the Greeks of that period a city of the "barbarously-speaking" Carians; although the Carians were experts in certain delicate arts, yet they spoke a tongue unknown to the

Achaeans. Mr. Hogarth thinks that the north-west corner of Asia Minor and Rhodes—Ialysus, Cameirus, etc.—first became Greek. As the inland overlords—probably the "Hittites," Aryan invaders from the north, who were not a sea-going people—began to lose grip, and shrunk away from the seaboard, the fitful raids of the Aegean people became consolidated into permanent colonies. How these colonies grew into the magnificent cities, and intellectual and artistic centres of Ionic Greece—centres which retained their vitality through many vicissitudes down to Byzantine times—there is no need for me to describe.

The Alexandrian Empire began about fifty years after the death of Hippocrates, and Alexandria became the centre of trade and intellectual activity; yet Attalid Pergamon was almost comparable with it for culture. The swift advance of Greek science in Alexandria is comparable with the bloom of Greek art in Athens; Euclid, Archimedes, Aristarchus, Hipparchus, Ptolemy, Heron, and other men almost as great, carried the sciences forward, especially astronomy and physics, with astonishing effect; and the great school of Medicine sprang up which produced Herophilus and Erasistratus, to us almost mythical names—so illustrious was their fame, so little are they known to us. Our reasonable hope that the discoveries in modern Egypt would bring forth some records of Alexandrian medicine has so far been disappointed. At the time of the foundation of the school of Alexandria the tradition of Hippocrates was probably in full vigour, a tradition, that is, not so much of formal doctrine, as of observation, comparison, and suspension of judgement. For, although it is true that the humoral doctrines were held speculatively, yet the observant reader will perceive in the best Hippocratean treatises how little of the practice was derived from *a priori* applications of them. This pedantry grew up with the Galenists. But we know from this positive medicine, as from religions, how under the Alexandrian mixture of Greek and Oriental tendencies—especially of platonic and pythagorean ideas—certain notions in medicine, the humoral doctrines especially, crystallized out in exaggerated shapes; and how principles and even words, becoming detached as abstract dogmas and terms, gained acceptance as forces or as entities. Hence these later traditional teachers became known as λογικοὶ—*dogmatici*; medicine became more than ever interfused with philosophy, and probably the *Timaeus*—as Hauréau said, a bad training ground for ignorant men—began to impose itself upon physiology, as it did in the Middle Ages. To these tendencies were added from the East other influences also, of still worse consequence: motley mysticisms and occultisms, emanations, astrology, and the whole apparatus of demonology. From Pharaonic Egypt medicine probably received little, for good or harm, unless it were the accumulation of drugs; medicine under the Pharaohs was dried and sterile, and the anatomy of the embalmers was as rudimentary and pettifogging as a quartermaster's astronomy.

These extravagances, as was natural, resulted in the empirical reaction to which I shall allude presently. Meanwhile we may turn to the Greek tradition, not purely Hippocratean but generally speaking almost free from sacerdotalism, on which Herophilus and Erasistratus were nurtured.

The formal attempt to contrast the schools of Cos and Cnidus, and to allot to each its several system of argument and practice, fluctuating as such doctrines must with the inclinations of the more eminent leaders, was perhaps never a very profitable inquiry; and in the absence of almost all considerable documentary data it is in the opinion of Haeser impracticable. All we can safely assume is that on the whole the Coans were disposed to have regard rather to the general state of the patient, the equipoise of his functions, and the external conditions, such as climate; whereas the Cnidians were disposed to give more attention to the organ affected, and so to rely more on local than on constitutional means of cure. In our own terms we should say that the Cnidian would have discouraged general pathology, and that reliance in prognosis and therapeutics on the whole man, on the *vis medicatrix Naturae* (νόσων φύσις ἰατρὸς) was a Coan point of view. Asclepiades, instructed in the physics of Alexandria, cannot but have recognized the tendency of moving systems to regain equilibrium, and from his practice it is evident that he protested, not against this beneficent bias, but against the teleological way of putting it. And for Aristotle himself, in distinction from Galen, it is no less just to admit that "teleology" meant no more than an analysis of statical relations, that the bodily functions knew no end outside themselves. From allusions in Aretaeus, Galen, Caelius Aurelianus, and other authors, we apprehend that at the time of the rise of the school of Alexandria both these earlier schools, Coan and Cnidian, were in activity. The son-in-law of Hippocrates, Polybus, in magnanimity, sagacity, and experience worthy of his noble kinsman, had carried forward the Coan school with signal success; and we cannot suppose that so eminent a physician as Diocles, though resident at Athens, could have been without considerable influence on the rising Alexandrian school. Diocles was too wise and too experienced a man to be a partisan, yet, as a platonist, his influence may have helped towards this bias in Alexandria; he may have sent them a copy of the *Timaeus*? Praxagoras of Cos, the first physician to teach the value of the pulse, was the master of Herophilus, who, and whose scholars, were accordingly, with more or less truth, regarded as in habit of mind Coan; while, as Chrysippus the Cnidian was the master of Erasistratus, he and his scholars were reckoned on the side of the tradition of Cnidus. In nearer proximity were the important schools of Magna Graecia and Sicily, of the great disciples of Pythagoras and Empedocles. Herodotus speaks of Cyrene and Rhodes as the two great medical schools of his time. It is probable that the inclination to anatomy was carried into Alexandria by the influence of Diocles and Praxagoras; for, although Galen respectfully banters him on the roughness of his dissections, Diocles was no inconsiderable anatomist. He is best known as the discoverer of the *punctum saliens*; but he carried the distinction between the venous and arterial areas beyond Aristotle, and traced the course of some of the glandular ducts. His anatomy, like that of Galen, was of animals only; it is the distinction of the Alexandrians, on the advantages peculiar to their city, to have founded the anatomy of man. Unfortunately too soon afterwards human anatomy—never practicable, perhaps, in Athens—became again impossible, and what had been gained in Alexandria must have been, as physicians are wont to say now of pharmacology and experimental psychology, too far from the sphere of practical medicine to be of co-operative service.

In discussing the later sects, in some of which anatomy was thus repudiated as otiose, we must remember that Daremberg, rather against the impression given us by Galen, was of opinion that up to the time of Asclepiades the school of Erasistratus had prevailed over that of Herophilus; and such also is my opinion; so far as this, at any rate, that the Erasistratids seem to have been commonly accepted as the "progressives" and the Herophilids as conservatives. This point is one of some little importance, as we shall see. It is known that during the life of Asclepiades some of the disciples of Erasistratus founded a medical school at Smyrna; and whether it be true or not that Asclepiades studied in Alexandria, which, in spite of the loss of its political importance on the shift of the centre of political gravity to Rome, was still a seat of cosmopolitan learning—a hive of Romans, Greeks, and Jews—we do know that he began his medical studies in Ionia, where in his time were the great cities and great schools of which I have spoken.

Now, in consequence of intrigues and persecutions in the early Ptolemaic period of Alexandria, many philosophers, physicians, and men of science were exiled or left the city. Certain of the emigrants settled in Asia Minor, and founded or developed these medical and other schools in Ionia and Syria; as, for instance, at Laodicea, and so forth. From the earlier of these schools issued many eminent physicians, among them Alexander Philalethes and Cleophantus, who was one of the masters of Asclepiades. From the school of Laodicea came the oculist Demosthenes Philalethes, whose renown was great in the Middle Ages. Now Cleophantus is mentioned by Pliny himself (*N. H.*, xxvi, 8) as recommending wine as a medicine—an ancient remedy adopted by Asclepiades also, and imputed

to him for unrighteousness. The school of Laodicea was founded by followers of Herophilus, so that Themison cannot have been deeply imbued with the doctrines of his birthplace; that of Smyrna, founded by one Hicesius about 50 B.C., when Asclepiades was an old man, was, as I have said, Erasistratean, so that these principles were still flourishing. Now we are told that Erasistratus, after his master Chrysippus of Cnidus, vigorously opposed the abuses of venesections, of purgation, and of emetics and clysters—Cnidian mitigations which in Asclepiades Pliny wrathfully denounced as cajoleries; for how in the face of a disease with horns and hoofs could any honest physician dare to stand prating about "Cito, tuto, et jucunde"—the well-known formula of Asclepiades! Again, Erasistratus laid stress upon diet, regimen, and exercises; and it is to be noted that he originated that initial abstinence which Asclepiades, and after him the Methodists, made so much of at the commencement of a cure, and which Galen indeed approved. The disciples of Herophilus, on the other hand, as we note also in Galen, were much more addicted to venesection and to a profusion of drugs. Herophilus himself, indeed, seems to have been a somewhat severe practitioner; but he retained the Hippocratic reliance on clinical observation, and was the first physician to watch the pulse and to describe its characters, even with excessive refinement.

By these considerations we are led to the subject of the medical sects. As the medicine of Alexandria stiffened, and was drawn out into naked formulas, there, as under like circumstances elsewhere, a reaction set in, which, however, by a contrary extravagance ended in a similar sterility. Thus, at Alexandria, in the later part of the third century, or, as it is said, a little earlier, under Philinus of Cos, a pupil of Herophilus, arose the sect of the Empirics, whom in a former essay I have called the Philistines of Medicine. Like our own Philistines, these physicians were not without excuse, and were guided by a sort of brutal if rather barren common sense. In discussing the history of schisms and sects we must endeavour not to accentuate the differences by logical oppositions, but to perceive the modes and impulses which drove men apart. Men rarely separate for fantastic or empty reasons, nor even on mere divergencies of temperament; they secede because certain relatively enlightened minds begin to apprehend the hollowness or inadequacy of current tenets. They secede and carry others with them; the established party is wroth, the dissenters hit back, and in the fury of their disputes and repartees the points of difference are forced into exorbitant contrasts. While in calmer moments no sensible dogmatist would have admitted that he treated his patients on an abstract formalism, so no sensible empiric would have admitted that he treated them on detached phenomena, without any attempt to attach fact to fact, or to interpret their directions. Yet in these dissensions of Alexandria the dogmatist was represented as recognizing no facts, the empiric no reasons. Some such extremists there may have been. Empiricism has, notwithstanding, been a valuable discipline, a more valuable discipline than scepticism, because it bases itself on action, while the sceptic gradually draws aloof from action. Celsus did not lose sight of these considerations of historical justice, but Galen accused the empirics less fairly. From Celsus we gather that the empiric of that day relied on three methods: on chance observations of happy results, but also on deliberate experiments or trials, and on systematic collection of facts. From Menodotus we learn that the empiric accepted what he called an *ἐπιλόγισμος*—which I might translate as common sense; for instance, we read that in a case of disease of the brain signs of any former injury to the head would be sought for, and weighed, even if outside direct perception. Still in his mistrust of tentative hypothesis the empiric was an extreme Baconian; he believed in induction, but did not apprehend the inductive method in its completeness; indeed he tried to restrict himself as narrowly as possible to proximate causes, and to regard longer concatenations and remoter causes with suspicion. The faults of the empiric were that he was unaware of the fallacy of *enumeratio simplex;* he had no criteria; and in treatment he would be guided only by the uppermost signs. Obviously, then, he would vilipend the only anatomy he could know, as Sydenham eschewed pathology. We have surmised that even the anatomy of Alexandria was not developed so far as to give much practical aid to medicine, except in some confirmations of surgery. And it is a remarkable tradition concerning Herophilus that this brilliant anatomist did divide his science from his clinical practice, thus leaning towards the empirics; as in later times revolts have been made to clinical observation from an inchoate pathology. Soranus, indeed, said necropsies were useless—"*ἀνατομὴ* (that is, *post-mortem* examinations) *ἀχρηστὸς ἐστιν.*" And surely in the midst of Alexandrian visions many of the sayings of the empirics were refreshing; such as these, quoted by Celsus, "Ne agricolam quidem aut gubernatorem disputatione sed usu fieri"; "Morbos non eloquentia sed remediis sanari"; or even the characteristic "Non interesse quid morbum faciat sed quid tollat." The empiric at worst meant business. And we can readily understand the testimony of Celsus and others that the empirics turned out excellent surgeons, such as Heracleides of Tarentum. They were no transitory sect; we read of professed empirics down to the time of the half empiric and half sceptic Sextus Empiricus in the fifth century. In these times, and before them, we find that the medical like other sceptics, as they lost their zeal, began to crave for coarse mental stimulants, and gave themselves up to rank superstitions.

Still, as I have said, the more rational empirics undoubtedly put symptoms in some sort of major and minor subordination, and they esteemed the clinical descriptions of Hippocrates and his immediate followers. Even as physicians they could not ignore the memory of experiences, nor assert that observation can proceed without connotation; but in principle to the *ἔνδειξις* of the dogmatist they opposed *τήρησις*. The best rendering of these terms I have found in Castelli, who renders *ἔνδειξις* as the determination of agents by the causes and mode of generation, *indicati ex indicante*, and *τήρησις*. as *cognitio fide sensuum;* or, as I may put it, a tight attachment of the perception to the mere events. On this habit Galen, in his treatise on Sects, rightly comments that, as phenomena are infinite, we cannot but select; we cannot but note one feature and discard another—for example, that a patient has naturally curly hair will be irrelevant; and as it is not every man who knows what to accept and what to discard, therefore discerning observation implies training. Moreover, many of the profounder affinities cannot be detected but by reason. This is, of course, the perennial quarrel between the practical man and the theorist; the theorist is prone to overlook the contingent, the practical man to see nothing but the immediately accessible, incidents. Still even early and rude empiricism could not but begin to demand explanations, and to perceive that there were things *ἄδηλα*, as well as *φανερά*, with which, if true affinities are to be traced out, the understanding must deal. One fact was not as good as another; facts had their relative values, to be appreciated by a mental operation, and some indeed were crucial. But, persisted the empiric, clinical observation cannot teach us causes, while shrewdness and insight with experience—*πεῖρα τριβικὴ*—can by provisional axioms make order enough to give the physician no insufficient a guidance in the infinite world of symptoms. The empiric starved his method by isolating it. With these and such limitations, however, it would seem that the empiric, as such, could never have risen even to the bare idea of preventive medicine.

The empiric did not see that the human mind cannot content itself with perpetual suspense, but in default of some chain of reason will betake itself to analogies, which are usually superficial and false; nor did he perceive the indirect influence of the sciences in training the mind as an instrument to accuracy and method. Serapion, indeed, explicitly advocated analogy—*ἡ ἀπὸ τοῦ ὁμοίου μετάβασις*—a method fraught with the gross errors of folk medicine. A debased empiricism will then abut either on the one hand by recognition only of the coarser phenomena upon folk medicine, or on the other, as in Sextus, upon the fatigue of scepticism; but more enlightened empirics, such as Menodotus, came near the salvation of the inductive method, and definitely did take account of remoter and obscurer causes. Menodotus, as M. Favier in an able essay has shown, even recognized the value and purpose of provisional hypothesis.[4] The contrary tendency to scepticism

is indicated by such terms, common to both empirics and sceptics, as *ἐγκύρησις*—a lighting upon events, as opposed to conceptual anticipations of them.

When we try to compare the standpoint of the dogmatist with that of the empiric, we are met on the threshold with the curious question, How much in the direction of the understanding the senses contain, or imply; and how much *διανόια*—or the intelligent collection of apparent facts, contains of *λόγισμος*—or a reconstruction of them; and again, how far these processes are functionally in combination with *ἵστορία* or memory? On reflection we shall perceive that only in an abstract logical scheme, in a sort of Athanasian mosaic, is the mind divisible into such severalties. The faculties of mind and body work not in compartments but as a contexture; and in so far as these faculties are drawn asunder the functions of the whole understanding are thrown out of balance and its products perverted. In the school of Hippocrates it is true that humoral hypothesis was professed, yet in the matter of practice the bent of it was strongly empirical, and the understanding was regarded as receptive rather than productive. It was to this attitude of mind that Sydenham returned, to a sort of systematic empiricism making for the plotting out of phenomena in series, in some contrast with the comparatively occult curiosity of Morgagni about seats of disease, and of modern medicine about their genesis. It was in their reliance on sagacity before logic, that the saner dogmatists—such as Celsus—were Hippocratean; they trained and trusted the faculty which Cicero calls *ingenium sagax*. But, after all, perhaps, few schools—as few religions—were as bad as their creeds.

Of the state of medical opinion in Rome in the first century B.C. we have but indirect evidence, and even of this not much. Moreover, we have to set aside the random invectives of Pliny; happily, indeed, we are able to discard them for the evidence of Celsus, a sober and competent author, who, moreover, flourished nearer to the time we are considering—the time, that is, of the setting of the school of Alexandria and of the large migration of medicine to Rome. In the treatise of Celsus, then, medicine in Rome is presented to us as still in its main quality solidly Hippocratic, fortified by Alexandrian science, and chastened by the influence of the empirics who were protesting against the later Hellenistic vagaries in Oriental metaphysics. As I have recently published a note on Celsus in the *Classical Review*, I will not stop to repeat it here; I will do no more than indicate that among the upper classes of Rome in the first century B.C. medicine had been lifted far above the folk medicine of Cato; although beneath these classes it was flowing on in scarcely diminished volume. Thus was floating upon a Graeco-Roman aristocracy of family and wealth a Greek, but still, as represented by their spokesman Celsus, a sedate and instructed medicine worthy of the Roman gravity, when, from more than one quarter, burst forth a new and revolutionary idea, championed by men of great ability, by a poet of transcendent genius, and by a physician rich in talents, which shook the Hippocratean raft almost to pieces. Indeed, in its later and corrupted form it was decomposing the science and art of medicine into empty conceits, when the more tremendous and, on the whole, more virtuous arm of Galen attacked and demolished it. So close have been the alliances between medicine and philosophy one may wonder that the atomism of the unrivalled twin masters Democritus and Leucippus had not made an earlier prize of our art—an art drifting then and since through many ages with uncharted methods, and without anchorages in substantial knowledge; for humoralism had ignored or neglected the pathology of the solids of the body. The triumph of Methodism proved but a hollow show, though, as I have stated upon the elucidations of Daremberg, Diels, and Wellmann, its survival, from its beginning to its fading away in Salerno, was a longer story than is usually told. For my part, however, I should speak, not so much of the late survival of Methodism as of its relics, and of these rather as its accidents than as its substance; but it is true that doctrines have their roots deeper in the past, and their vitality lingers longer than is obvious to the cursory observer.

The Hippocratic Canon is permeated by many inconsistent strains of thought; as, for example, in the *Περὶ διάιτης*; the *Περὶ φύσιος ἀνθρώπου*; the *Περι φυσῶν*, etc. Again, Diocles seems to have been a forerunner of the pneumatists. So among the adumbrations of Methodism, we find that Asclepiades apparently held the strange opinion, excusably derided by Galen, that the urine was not, as Hippocrates (*Περὶ ὀστέωνφύσιος*) truly held, a stream secreted by the kidneys and trickling as rivulets by way of the ureters into the reservoir of the bladder, but that the corporeal fluids rising in vapour exhaled, and, vaguely permeating the pores of the body, condensed in the bladder. Now it luckily happens that Galen, in contesting this very unanatomical but very methodistical notion, remarked that it was in origin pre-Alexandrian. Furthermore, certain opinions concerning plethora, similar to those of Asclepiades, were also held before Erasistratus by one Aegimius of Elis. Now Aegimius, as it seems from Celsus and Galen, did not accept the humoral pathology, and was therefore neither Coan nor Cnidian in doctrine. Aegimius, then, may have been the first champion of atomism in medicine, as Asclepiades was really the last. These and such questions are very ably treated by Wellmann in the new Pauly,[5] where he traces back the atomistic stage of medical history to Erasistratus and beyond him. Diels is now of opinion that Erasistratus endeavoured to harmonize the materialism of Democritus with the ideas of Aristotle; that, according to Erasistratus, it was by an atomic mechanism that the great artist Nature created and acted; as Galen put it (*De Facult. Nat.*, II, 2, etc.), "*προνοητικὴν τοῦ ζῶου καὶ τεχνικὴν αὐτὸς ὁ Ἐρίστρατος ὑπέθετο τὴν φύσιν.*" Health accordingly consisted in a *συμμετρία* (rhythmical system) of these rudiments.

Again, as we learn from Brieger and other commentators, Democritus opined that the soul consisted in a collective activity of spiritualized—that is the finest—atoms in all parts of the body; this opinion was held with a small difference by Asclepiades also, who proceeded to found upon it a positive method of psychiatry, wherein *παραφροσύνη*—which he clearly distinguished from the cerebral symptoms of other diseases—was to be treated as a disorder of the brain, a corporeal disease remediable by corporeal means, in which, however, he included music and other psychical influences; a true, and for that age admirable conception which may be said to have fallen into utter neglect until its restoration by Pinel. A note of the rare insight of Asclepiades is to be marked in his ideas of the integration of soul and body; for that these were real thoughts of his, not notions coloured after our modern patterns, is illustrated by such reflections as this—that hallucinations dissolve or diminish in the daytime, because they are counteracted by the data of the senses; as in the rays of the sun a torch becomes invisible. But in the dark the veil of oppression over the senses cannot be drawn away, and thus in sleep, the senses being closed, the pictures of fancy have free play. (Cf. Lucretius, vi, 45.)

It was, then, to the remarkable opinions of Democritus on the nature of the soul that Asclepiades, surpassing certain shortcomings of later thinkers, indeed of Epicurus himself, returned; but now we come to an important advance of his own. Democritus, as I have said, held the interesting view that the soul consisted in the sum of functions, in a co-operation of the atoms of all parts of the bodily system (*συγγυμνασία τῶν αἰσθησέων*), so that between animation, consciousness, and thought—the *ἄλογον* and the *λογιστικὸν*—there were for him only degrees, no radical division. Erasistratus accepted the familiar divisions between the vital principle in the viscera, that of the animal life in the arteries and respiration (*τὸ ζωτικόν*), and that of the mind (*τὸ ψυχικόν*). For Diocles the soul was in the blood, for Praxagoras in the heart. It was the corollary of Epicurus that for the sake of the soul the body must therefore be cherished, which led to the degradations of hedonism. Now it is recorded of Asclepiades that in this part of physiology he made certain proofs by experiment. The view of Democritus—*πνεῦμα παντὶ τῷ σώματι παρακείμενον*—obviously excluded a particular seat of the soul; yet, said Asclepiades, in the synthesis the brain must take a predominant part; for he had observed diseases of the brain to be followed by notable perversions of the mind. It was to throw light on this dilemma that he undertook the experiments, in some prescience of the methods of Galen; he decapitated animals of different orders, eels, tortoises, goats, crickets, flies, and pointed out that, though under this dismemberment they could all survive a while, it was in very various degrees. Moreover, in his research Asclepiades took heed of a certain reserve

akin to the system of controls in our experimental method. He pointed out that the functional products were continually variable, even of the soul; this he explained by the incessant whirling restlessness of the atoms (*κίνησις, φόρα, ῥυσίς*); he warned the empirics that therefore two and more observations could never be made under identical conditions. If, then, Asclepiades, in concentrating his explanation of insanity upon the brain, conjectured that the atoms of the brain were rounder and smoother, and so more mobile, than those in the rest of the body, where they united by hooks to form a web (*συμπλοκή, complexio*), yet he was led into this transcendental speculation by observation and experiment. We know, also, that he made *post-mortem* examinations; for in a gibe of Galen's, Asclepiades, who consistently with his theory and with the teaching of Erasistratus regarded digestion as a merely mechanical grinding and pulping, is derided for not observing different qualities in the digested food, whether in the vomit or "*ἐν ταῖς ἀνατόμαις*." But I will not attempt to detain you by farther illustration of the researches of Asclepiades, for, as in the case of Francis Bacon, his meditations were often more fruitful than his applications. Thus it was his logic which dictated to him that the finest atoms must be in the centre of gravity of the body —namely, in the breast; and, with more truth, he adhered to the belief that respiration consisted in the affinity of these finest atoms for the like finest particles of the atmosphere, those nearest like fire or pneuma, or, as we might say, of oxygen. The directions of the *φόραι*—the atomic orbits—he explained partly by "logic," yet also (as we might expect from an Alexandrian student) by some mathematical conceptions. For this reason the hypotheses of Asclepiades have been seriously compared with those of the iatro-physicists or iatro-mathematicians of the seventeenth century; but surely this is to forget that in the vast interval the bases of the medical sciences had been wholly transformed. Of philosophy the bases continued to be more uniform; Asclepiades, like his intellectual ancestor Democritus, was as convinced a teacher as Locke of the relativity of knowledge and of the relative finality of the appreciations of the senses. Ultimate substance is *ἄδηλον*, and we cannot, he says, carry the bases of our knowledge beyond phenomena (*φαινόμενα*).*

From considerations such as these, by a closer and wider investigation of such fragments and allusions as are extant, we begin to perceive that to regard Asclepiades as a smooth-tongued and covetous intriguer, bent on plausible inventions and pliable therapeutics wherewith to tickle the fancy of an enervated and self-indulgent society, was an unfair and mistaken judgement. On the contrary, we have seen that this eminent man was educated from his youth for the medical career; that to this end he studied in Erasistratean schools, perhaps in Alexandria itself, and came to Rome inspired by no time-serving, extemporal, or individual sentiments, but by a large and revolutionary system of doctrine, seriously intended to overthrow the post-Hippocratean dogmatism, already combated by the empirics. This system, adapted from the atomic theory of Democritus and Epicurus, and developed in its applications to medical science, had been delivered to him through four or five generations of authoritative teachers; and about the same time this theory and interpretation of life, already for two or three generations propagated in Rome, was to reach its zenith in the splendour of the epic of Lucretius. In common life educated men, and even the general public also, were repudiating the crude tenets and the barbarous practices of the old-fashioned medicine; while in respect of the empirics, on the other hand, intellectual observers, such as Crassus the orator,† Cicero, Atticus, Mark Antony, some of whom are recorded as personal friends and patients of Asclepiades, could not fail to discern the aridity of doctrines which professed to see facts only one by one. Thus the minds of thoughtful Romans were open to consider almost any plausible doctrine of causation, and meanwhile to welcome more temperate therapeutical methods. At this time it was that Asclepiades arrived from Athens, animated by the atomic theory, a physical conception of nature which in philosophy and literature also had already inspired other eager spirits with the ardour of a revelation, and professing to found a new practice upon those methods of diet, active and passive exercises, baths, and the conduct of life which we honourably distinguish as physiological; and that Asclepiades was no ineffectual sophist, but expert enough with his hands on occasion, we infer from his reputation as a surgeon, and from the attribution to him of the operation of laryngotomy.

But what about the ungenerous denunciations of Hippocrates! Why, we shall step out of the study, and apply to these scoffs a little worldly common sense. Asclepiades came to Rome as a rebel; he had to fight for his hand against a powerful array of conservative forces, especially against a jealous and none too scrupulous body of practitioners, all or nearly all of them either dogmatists or pretenders; both of which parties armed themselves alike with weapons from the armoury of the older tradition. As for our fathers Moses, being interpreted, meant Bishop Usher, so in the mouths of the Greek doctors in possession "Hippocrates" meant the prevalent dogmatics and routine. And it were no inconsistency of temperament in a reformer one day, as irascible man, to throw controversial missiles at the effigy of a Hippocrates or a Moses, and on the next, as sage, to treat their persons with reverence. The remonstrances of Asclepiades were far away from the raw and insolent abuse of Thessalus, such as that the aphorisms of Hippocrates were all lies. Pliny is the only writer to impute moral delinquency to Asclepiades; the medical botanist and folk-lorist and the philosophical physician were irreconcilable. Varro, whose leanings were towards the Empirics, bitterly opposed the Epicureans, and in this sense only opposed Asclepiades. Scribonius Largus protested, but with great respect, against a physician who discouraged the liberal use of drugs. The wise and learned Celsus, in a period when literary acknowledgements were usually disregarded, mentions Asclepiades —so I have computed from the index of Dr. Friebos— no less than twenty-nine times; if often with dissent, yet always with respect, and many times with honour; for instance as "*auctor summus*," and as one who "*medendi rationem ex magna parte mutavit.*" How paramount in his own day was the reputation of Asclepiades we know from the attempts by other potentates, especially by Mithridates, to allure him elsewhere. Galen, though more acrimonious in dispute than Celsus, yet likewise betrays in his argument, and indeed avows, that the fame and ascendency of Asclepiades were still paramount, and that he sought to discredit that fame not in morals but in doctrine. Between such antagonists there could be no truce; and, as Asclepiades had been in his grave for a century and a half, the illustrious Galen got all his own way in the wrangle. Still I repeat that these angry protests of Galen, for much of which there was controversial justification, were a tribute to the authority of Asclepiades, and carried with them no more imputation of guile or dishonour than in the case of Menodotus and others whom he pursued with the same pugnacious eloquence.

While Asclepiades erred towards a dissipation of the specific in the universal, Galen, who belonged rather to the Herophilean tradition, became accordingly engaged and even entangled in too assiduous an occupation with specifics and the consequent enormous polypharmacy. Moreover, Galen had adopted the monotheism which, as it were in reaction from the invasion of demonology, had arisen in Alexandria, and in with it he had woven a highly elaborated teleology, which virtually postponed the divine to the human intelligence and turned any incidental result of the coadaptation of an organism and its conditions into its end. Besides his loyal devotion to the name and school of Hippocrates, Galen was himself an ardent, only too ardent, humoralist. He relied also upon the Critical Days, repudiated by the atomist school, which, if a remnant of magical numbers, was accented, and more rationally, by the periods of pneumonia—a malady then frequent, and of the malarial influence which tainted many of the other diseases of the Mediterranean. It is a mistake, however, to suppose from this that the Methodists did not recognize crisis; what they denied was that crises were determined by calculable periods.

* For the discussion of these materials derived from Sextus Empiricus, Caelius Aurelianus, Galen, Aetius, Cassius the iatrosophist, Antiochus of Ascalon, etc., I am indebted chiefly to Daremberg, Brieger, and Wellmann.

† Cicero, in writing to Crassus of Asclepiades as both friend and physician (apparently of both?), says that Asclepiades was indeed eloquent, adding: "In eo ipso quod ornate dicebat medicinae facilitate utebatur non eloquentiae."—*De Oret.*, I, 14.

The researches of Maxwell, Kelvin, and J. J. Thomson—to mention but a few recent workers in this field—have linked us so much more intimately with the atomists of old, that we read even the esoteric *Timaeus* with less sense of the bizarre; still for medicine the doctrines of Asclepiades, and still more justly those of Themison and formal Methodism, were very crude, even as hypotheses; and from the peculiar needs of medicine they rambled far away. What the art of medicine needed above all things was positive methods and a ruthless fidelity to facts. I have been led to imply that for medicine even the cramped and illiberal notions of the empirics were less unwholesome than the fascinating and philosophically interesting visions of atomism. Philosophy is one thing, a craft is another, and a craft must walk before it can fly. Atomism did, it is true, recall men to the forgotten solids of the body, yet so very impalpably that not professional antagonists only, but the very nature of things warred against Asclepiades. If the despotism of Galenic tradition became an incubus to medicine, we may surmise that a tyranny of Methodism might have been a worse misfortune. Methodism would have started indeed with a "cito et jucunde," and the western sick might have been spared the flourishes of the actual cautery and volumes of blood, but the following centuries were rough; perhaps they were fascinated by rough handling, at least they did not resent it; and if Methodism ignored the *vis medicatrix Naturae*, Galenism too often forgot it.

To move onwards from Asclepiades: the early atomists had said little of the spatial relations of the atoms, of pores between them.* Plato supposed his triangles to act in a plenum.† Erasistratus and Asclepiades, however, laid stress on the pores; for instance, if there were no pores in the skin how could one sweat?‡ And Themison, who is commonly regarded, perhaps conveniently, as the founder of Methodism proper, for the pores almost forgot the atoms themselves. In what kind of association, then, did the atoms seem to the atomists? Had they any conception—to use our current terms—of a grouping of the indivisible atoms into molecules? Even when we come down to Asclepiades, had he in his mind's eye any functional, differential, or heterogeneous segregation of atoms? After some rummage among texts and commentaries, I have come to the conclusion that to this question no answer can be given. The difficulty is not so much that in respect of a building of atoms into molecules there is no allusion, as that in the relevant passages of the texts—fragmentary as they are—the extant terms and sentences are at variance, or indeed contradictory. Some Epicureans, using the word ἄτομος, regarded these particles as ultimate; others, using the word ὄγκος, as divisible; but it is not apparent that any point of constructional principle depended upon the difference. The probability is that the notion of systems of atoms, or of compound atoms as molecules, did not present itself formally to the ancient thinkers as a mode of functional development. They supposed that atoms might stick or crowd together, but they looked upon such adhesions as incidental, and usually, as hampering them in their orbits, mischievous. But Asclepiades, as we have seen, conceived of the atoms themselves as coarser and finer, and so differential in function. To read more into their expressions—at any rate into their extant phrases—is, I think, to import into them ideas of our own.

What is, then, the distinction which separates Asclepiades from Themison—the Epicurean from the Methodist? Well, this—that from regarding the atoms as in a plenum, or, again, as rushing, spinning, or whirling in space or spaces, Themison, as I have said, almost forgot the atoms in the pores, or, rather, forgot both in the meagre notions of relaxation (ῥυσίς, τὸ ῥύωδες) and constriction (στέγνωσις, τὸ στέγνον) in this area or in that. Asclepiades conceived of the atoms as losing their balance and crowding together, in this direction or in that, so as to cause a stoppage (ἔμφραξις), or at least a retardation (στάσις), of the currents in one part with a corresponding rarefaction in other parts. Of the rarefactions Asclepiades says less than Themison, for whom they loomed larger; and Themison contrasted the rarefied parts, where he regarded the tissues as relaxed, with the congested parts where they became choked or constricted. Thus, pain for Asclepiades consisted more particularly in a sense of stoppage, of aggregation of coarser atoms—as in thick blood, for instance; Themison reduced it to a mere *strictum;* and in their respective explanations of fever there were the same differences. Generally speaking, for the Methodist acute disease was a *status strictus*, chronic disease a *status laxus*.§ For pain, then, Asclepiades conceded that venesection, preferably local, might fairly be practised, though cautiously and only for instant relief; for he affirmed that on the whole bleeding tended to draw off the finer, the more vital, atoms first, leaving the coarser behind; so that rigor, due to such a peripheral viscosity, might follow venesection. Again, when arrests took place in certain parts, as in glands or in a lesion of a limb, the swift atoms, finding themselves thwarted in their orbits, would sweep upwards from the block, or perhaps from a more universal closure of the pores of the system, and thus set up general fever.

I may digress not inconveniently here to say that the interpretation of Fever was one of the great questions of the schools; that of the atomists we have noted. Diocles held that fever was a contingent effect (ἐπιγέννημα) of some morbid process, and Galen took a similar view of it, the not irrational view—over-emphasized in later times by Broussais—that all fever depended upon some focus of inflammation, especially if pus were forming. Other schools attributed fever to plethora: the Hippocrateans to bile—the degrees of malaria, for instance, being degrees or kinds of biliary crasis. And external poisons were not forgotten—such as bad food or bad gases; for to some such agency Thucydides tells us the great plague of Athens was attributed. By the Methodists, however, these doubts and conjectures were all diluted into the vague conceit of a mere *strictum*, more jejune even than the Asclepiadean stoppages of the pores. This was one of the universals (κοινότητες) of the Methodists; the other two chief *communitates* being the "laxum" and a third or mixed state, μεμίγμενον; this last being one of those shifts for the disposal of awkward instances to which most system-mongers are driven, only to find that it unites the difficulties of both extremes. This "mixtum" was inserted by Themison. On those universals Soranus wrote a book, lost with the rest of his works. Thus, conceptions which in Asclepiades were an endeavour to range biology with the positive sciences, to bring medicine into contact with physical methods, to anticipate Haller by bringing the solids of the body into the reckoning, were, by the extravagancies and fantasies of his immediate successors, the Methodists, attenuated into the flimsiest of cobwebs. To the most eviscerated of these notions the Methodists referred all phenomena; they scorned axiomata media, and sought to know the whole without knowledge of the parts. For them the problem of diagnosis was not, What are the phenomena? but how far could the malady be evaporated into a *communitas*—a *strictum*, or a *laxum*, or a *mixtum?* The treatment, accordingly, was just a correlative formula—laxative, tonic, tono-laxative—a facile device which, at any rate, discouraged polypharmacy. But, as Galen happily retorted upon them, as Humanity, for example, is a universal, but in the examination of individual cases, or even in inquiring into the species and sorts of Man, one very vaguely useful, so in disease the physician must not only pay regard to particular symptoms and characters, but must also inquire into what Galen called the procatarctic (occasional) causes, such as climate, age, sex, habit, and the like. This aspect of causation was familiar to Asclepiades, who taught, for instance, that diseases behaved differently, and patients tolerated treatment differently in Rome and in the Levant. However, too often these discussions were, after all, fights between one windmill and another. It is curious that each in his own extreme, the Empiric and the Methodist alike, the

* Empedocles supposed the emanations from external bodies passed through pores into the organs of sense.

† The πύκνωσις and ἀραίωσις of Anaximenes were not spatial relations of atoms but extenuation and condensation of a uniform "air." For the extant sources the reader is referred to the collection of Ritter and Preller.

‡ I may here recall the contemporary, and especially Methodist, idea of respiration by the skin in man.

§ That Asclepiades, or any other one physician, propounded the distinction between Acute and Chronic Disease I can hardly admit. The prevailing notion in the time of Hippocrates seems to have been that Chronic Disease was a sequel of Acute, and this notion became modified gradually.

Empiric glued to his particular, and the Methodist blown into his universal, dispensed with the need of inquiry into causes, or, indeed, into processes. While for the Methodist the specific fact was as soon as possible to be sublimed into one of the three universals, for the Empiric it was an ultimate; the one refused to see it, the other refused to pursue it. This was a sad falling off from Erasistratus, who made some necropsies; he observed, for example, that in ascites the liver might be of stony hardness.

But the Methodists soon discovered—or it was discovered for them—that to reduce medicine to two, or even to three, abstract categories was, because of its very facility, to reduce it to a vapid and fruitless pretence; they formulated, therefore, other universals subordinate to the chief triad. Yet even then, for the explanation of poisoning, of the invasion of foreign bodies, of tumours, and of surgery in general, the idea was unworkable, and, at any rate in its emptiness of content, futile.

The parallel categories to which their therapeutics were necessarily reduced were of *contraria contrariis;* if, as in the first stage of fever, there was constriction, then relaxants were to be used; if, as in the second stage, there was solution, then astringents. So, again, in presumptive local leaks or stoppages astringent or solvent remedies respectively were to be directed to the affected area. It is easy to see how such rules-of-thumb must lead, as in fact they did, to the vainest and most senseless routine, and how destructive they were of the method of Hippocrates, which, as Celsus wrote, was *mederi oportere et communia et propria intuentem.* Still, as in all such revolts, the leaders, as we have glimpses of them down the centuries in Oribasius, Aetius, Alexander of Tralles, were better than their followers. But I must permit myself again to commend the excellent and permanently influential side of their therapeutics, derived from their forefathers, Asclepiades and Erasistratus, that which congruently with their physical views led to the correspondent extension and development of the physical means of cure—of passive movements, graduated exercises, special baths, diet, regimen, and so forth. These were the methods which in the hands of Asclepiades supplemented the barbarous practices of Archagathus. A proverbial rule of the Methodists, which we trace back to Asclepiades and Erasistratus, was the well-known three days' abstinence with which they commenced the treatment in acute disease. It was in the later stages that wine and good feeding was recommended.

In obstetrics the Methodists attained distinction, especially in the person of Soranus, whose fame, and the fragments and titles of whose works, testify to remarkable abilities, not in obstetrics only, but over the whole sphere of medicine. The man is reflected in his terse, lucid, shrewd, and practical style. Soranus was, as it were, reconstructed from these relics by Reinhold Dietz of Königsberg, another learned physician carried off prematurely by death. The development of obstetrics probably arose out of the Alexandrian anatomy; we know that Herophilus wrote upon the subject. Thessalus of Tralles, on the contrary, in the reign of Nero, reveals himself to us as an arrogant boaster, and not only as vainglorious, but as the captain of troops of pretenders, to whom he promised for a fee to teach in six months all that need be known in medicine. Such medicine as Thessalus had to teach might have been written on the proverbial half-sheet of notepaper, and learnt for less money in as many hours. He vaunted himself as the foe of doctors, and on his ostentatious tomb in the Appian Way inscribed himself as Iatronikes. He vanquished, it is true, whatever there was in the science and art of medicine, of understanding, of skill, of patience, and of honour; and must have revealed to the respectable Methodists how near are the boundaries of vanity of doctrine and vanity of conduct. Asclepiades was the forerunner of the Methodists it is true; but it was by Themison and his school that the atomistic conceptions, which at best lent themselves too readily to fantasy, were so reduced, both in theory and practice, to summary forms as to be comprehensible by any illiterate charlatan.

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AN OXYGEN GENERATOR AND INHALER: ITS USE IN MOUNTAIN SICKNESS.

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I HAVE contrived this simple and inexpensive piece of apparatus for use in places and conditions where cylinder oxygen cannot be easily obtained for patients with heart disease, asthma, etc., who are in a state to manipulate the apparatus, and particularly for use in mountain sickness. Its portability and lightness make it suitable for transport, and it can be used wherever a pint or two of water can be obtained. The apparatus is of less use in cases of pneumonia, etc., where oxygen can only be tolerated when administered through a funnel or a light mask; but even for these it may be worth having for emergency work, and in uplands and hinterland, away from big cities, where oxygen cylinders cannot be obtained, for successive bags full can be made and the gas pressed out through the funnel or mask.

The apparatus consists of a small metal box—the generator—connected with a vulcanized rubber bag—the breathing bag.

The bag holds about 15 litres, and ends in a rubber mouthpiece. The bottom of the generator is closed by a screw cap and asbestos washer, and a piece of wire gauze is

Fig. 1.

interspersed between the generator and the bag. The mouthpiece is closed with a screw-clip during the generation of the gas.

The oxygen is generated out of oxylithe—a peroxide of sodium—by contact with water, and there results a solution of caustic soda. Thus:

$$Na_2O_3 + H_2O = 2\,NaOH + O_2.$$

The caustic soda solution is used to absorb the exhaled carbonic acid. The oxylithe is sold in flat tins containing ten blocks to the pound. Three blocks make a full

Fig. 2.

charge, and the oxygen yielded from this is amply sufficient for fifteen minutes' inhalation. I have breathed comfortably the supply from two blocks for fifteen minutes.

The figures show how the apparatus is used. In Figure 1 the bag is laid flat and emptied of air, and the oxylithe is introduced into the generator. Figure 2 shows

how one or two pints of water are introduced into the bag, the generator being elevated so that water cannot enter it.

In Fig. 3 the bag is shown elevated after closing the screw-clip on the mouthpiece, so that water enters the generator and the oxygen is evolved. It is not necessary but better to immerse the generator in water, or hold it under a running tap to cool it during the generation, for the heat produced by the chemical action is considerable. Fig. 4 shows the inhalation proceeding. The nose is closed by a soft clip, the mouthpiece is clasped by the lips, and the screw-clip opened. The solution of caustic soda is shaken round the bottom of the bag by the hand that grasps the generator. The solution, of course, must not be shaken too violently, or drops may reach the mouthpiece.

The subject should expire deeply before inhaling, so as to diminish the dilution of the oxygen by the nitrogen within the lungs. The inhalation proceeds till about two-thirds of the bag has been emptied. It is best to stop then because the oxygen is diluted by the nitrogen given out from the body. The subject, of course, must not draw in any outside air, or let any oxygen escape into the outside air during the inhalation, but keep his lips tight round the mouthpiece and his nose shut. After use the apparatus is washed out with water and hung up to dry.

The instrument has been put to the test in the high altitudes of Mexico by Mr. E. R. Calthrop, the distinguished engineer, who has just returned from a six months' visit to Mexico to carry out a reconnaissance survey for a projected railway. Mr. Calthrop, on his previous expedition, suffered severely from mountain sickness, and had considerable anxiety in facing the sickness again. Taking the instrument out with him after a lesson from me in its manipulation, he used it about twelve times, and each time with success. Several of his friends had suffered at these high altitudes in the same way, and so great was the benefit he obtained that he wished me to publish the details of his experience under the authority of his name. The apparatus had removed half the difficulty and discomfort of the journey. "Mexico City," he said, "has now no terrors for me." Mexico City is at an altitude of 7,450 ft., and Mr. Calthrop says all, except the young and perfectly fit, feel the effect of altitude, after going up there by train from the sea, for the first two or three weeks. "Men of my age feel it very commonly, and have to guard against over-exertion until acclimatized." The medical men, he says, told him they often had to convey people out of the high altitudes and back to the States, taking oxygen cylinders with them in the train. Cylinder oxygen there is very expensive and awkward for conveyance. Pneumonia, he said, was a common complaint, and the best chance was to convey the patients down as quickly as possible some 3,000 ft.

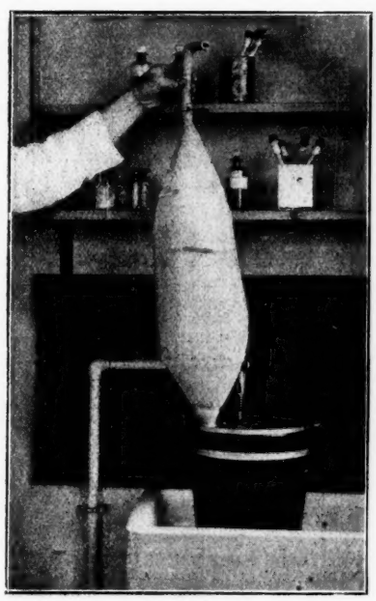


Fig. 3.

Fig. 4.

In the previous expedition Mr. Calthrop had had an alarming attack at 11,500 ft., after riding too quickly up the last 3,000 ft. He had at that time lost 2 st. in weight from bad feeding and the hardships of the journey. He got off his horse to take a photograph, and in half a minute could not stand, was "frightfully sick for about an hour with distressing palpitation, and had to be carried in a litter." In two days he became fairly acclimatized again to this altitude.

On his second expedition he was affected with palpitation and a feeling of "nervous strain" on the second day after reaching Mexico City. The palpitation was continuous, but increased on climbing upstairs, and was accompanied then by breathlessness.

He filled the bag with oxygen and inhaled it for about seven minutes. The palpitation ceased, and did not return for four days. He took oxygen again on the fifth day, and experienced complete relief from the symptoms during the next seven or eight days. He was certain that the oxygen not only relieved him at the time, but that the relief lasted for some days. On his previous visits, he had been very uncomfortable for the first ten days after arriving from sea level at this high altitude. He used the apparatus three times in Mexico City, and then went down to an altitude of about 1,000 ft. and eventually to sea level, the expedition occupying nearly three months. On his return to the highlands he attained an altitude of 5,000 in two days from sea level, and had no discomfort there, but began to feel trouble again two or three days after again reaching Mexico City, where he stayed ten days, took oxygen twice, and was relieved each time. He had learnt to handle the gas bag better, used it longer, and obtained relief quicker. He breathed from the bag till he had used most of the oxygen up, that is, about fifteen minutes. The palpitation always ceased within half an hour of beginning the inhalation. From Mexico City he went to an altitude of 9,000 ft., and was in bed there for four or five days with severe pain in the ear. He had suffered from a mastoid abscess previously. He got up feeling very feeble with much palpitation and shortness of breath. Oxygen was again taken and had even a more pronounced effect, but the after-effect only lasted about two days, that is, a shorter time than in Mexico City. He had recourse to the apparatus four or five times at this altitude, and at the end of three weeks became fairly acclimatized. He spent six weeks at this place and traversed the railway (10,050 ft.) from there to Mexico City four times. On one of these journeys several people in the carriage were badly affected, but he having taken oxygen beforehand was undisturbed. On returning to Mexico City he had ten days' malarial fever with a temperature going up to 104° F., and an irregular pulse. He inhaled oxygen then in the presence of Dr. Deakens. His pulse fell from 136 to 98 and became regular.

Mr. Calthrop also gave the British Vice-Consul the use of the apparatus, as he, too, was suffering from cardiac irregularity. Oxygen relieved him, and the relief lasted during the subsequent week.

It seems as if the oxygen supply fell just below the needs of the heart in these men, and that a chemical change occurred in the sarcoplasm, such as the accumulation of lactic acid, and disturbed the cardiac action. The additional oxygen supply just turned the balance, consumed the unoxidized products, and relieved the heart for some time.

In the case of a lad with mitral stenosis whom Dr. James Mackenzie invited me to study with him, the pulse, as shown by polygraph tracings, became very

irregular for some minutes after he had walked up and down a flight of eleven stairs. Inhalation of oxygen markedly lessened the irregularity. Double the climb, in fact, did not have the effect of a single climb without oxygen. In mitral stenosis we have a condition of oxygen want very like that which occurs at high altitudes.

OBSERVATIONS ON A YOUNG MAN WITH MITRAL STENOSIS.

Summary of Experiments, September 27th, 1909.

Tracing.	Irregularity Lasted.
1. After lying quietly in bed, then going up and down eleven stairs...	84 secs.
2. After lying quietly in bed, then going up and down eleven stairs...	72 ,,
3. Oxygen given for 9 minutes, and continued after going up and down eleven stairs ...	30 ,,
4. Oxygen given, but stopped after going up and down eleven stairs...	72 ,,
5. No oxygen given for 10 minutes before going up and down eleven stairs	60 ,,
6. No oxygen given for 12 minutes before going up and down eleven stairs	75 ,,
7. No oxygen given for 15 minutes before going up and down eleven stairs	110 ,,
8. Oxygen given for 5 minutes, and continued after going up and down eleven stairs ...	40 ,,
9. Oxygen given for 10 minutes, and continued after going up two flights of stairs... ...	90 ,,
10. Oxygen given before and continued after going up one flight of stairs	25 ,,

Summary of Experiments, September 30th, 1909.

Tracing.	Irregularity Lasted.
11. After lying in bed, first effort upstairs ...	42 secs.
12. After lying in bed, second effort upstairs ...	54 ,,
13. After lying in bed, third effort upstairs ...	90 ,,
14. After oxygen, first effort upstairs	40 ,,
15. After oxygen, second effort upstairs	48 ,,
16. After oxygen, third effort upstairs	48 ,,
17. After oxygen, fourth effort upstairs	42 ,,
18. After oxygen, fifth effort upstairs	40 ,,
19. Mask closed, and expired air breathed. Marked irregularity in a few seconds. The mask opened, and irregularity disappeared.	
20. Upstairs immediately after this	63 ,,

Mr. Calthrop found the apparatus very portable and durable. It weighs about 2 lb. It travelled on a pack mule most of the time, and suffered plenty of hard usage and exposure to great changes of temperature.

The apparatus returned looking in as good order as it went out. The 1-lb. cases of oxylithe packed nicely and kept tight and in good state.

It seems, then, after this searching test that the apparatus is one which may afford considerable relief to those who have to face high altitudes.

It is obvious that the apparatus can be used also for a short exploration of a poisonous atmosphere. For this purpose a mouthpiece is supplied which is strapped to the head so as to leave the hands free, and the middle of the bag can be strapped to the body. If a second apparatus were carried, and a tin of oxylithe, and this were charged when the other was almost expended, the wearer could stay a long period in a poisonous atmosphere, in fact until he used up his supply of oxylithe. The second apparatus can be carried with the water in the bag, and the oxylithe in the generator, a screw-clip closing the pipe between the two. To recharge the first apparatus the generator must be elevated and the water returned to the bag before the new charge is put in.

The apparatus is made by Messrs. Siebe, Gorman and Co., 187, Westminster Bridge Road, S.E.

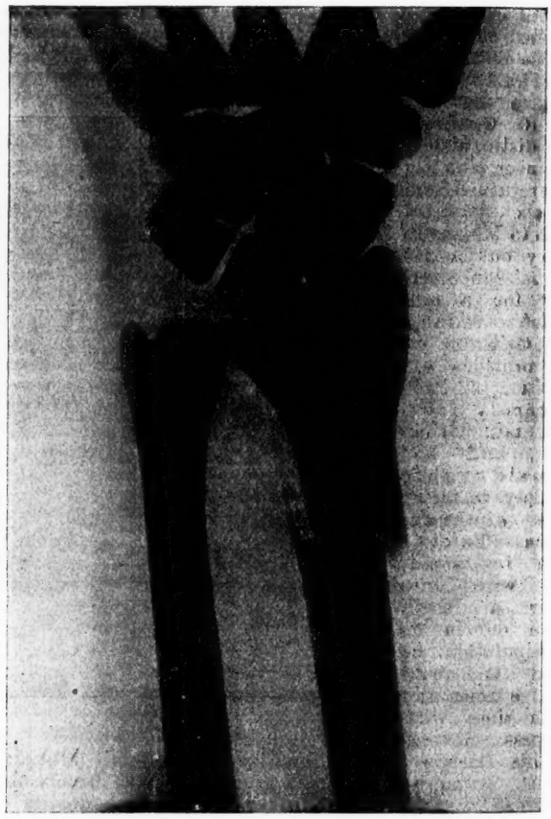
A CURIOUS instance of the apparently incorrigible readiness of the public to make experiments on themselves with anything which professes to be a secret remedy is afforded by the recent tragedy in Vienna. Somebody sent to eleven out of twenty-five officers recently appointed to the general staff some pink capsules; these have been proved to contain a large quantity of potassium cyanide, and one officer who swallowed a capsule died within a few minutes.

A CASE OF FRACTURE OF THE RADIUS TREATED BY EARLY MASSAGE AND MOVEMENT.

By J. P. HASTINGS, M.B., M.R.C.S.,
DUNEDIN, NEW ZEALAND.

I THINK that in fractures such as this the splints may safely be removed much earlier than is customary. The ulna acts as a natural splint. Previous to the performance of the passive or active movements, the limb was always gently massaged. The result was convincing.

Mr. M., aged 18, student, fell upon his right arm whilst playing football. The radius was broken, as shown in the accompanying radiograph. Examination with the fluorescent screen showed that the displacement of the bones was lateral. There was no antero-posterior deformity. The patient was put under ether, and the deformity corrected as far as possible. The limb was then put up in Gooche splints. The anterior splint extended from the bend of the elbow to the palmar flexure, the posterior from the elbow to the level of the metacarpo-phalangeal articulation. On the day following the fracture the posterior splint was removed, and the limb gently rubbed. This was done for five or ten minutes daily for the first six days. From the very first the fingers were left free, and the patient told to exercise them. On the sixth day passive movements were begun; the posterior splint having been removed, the wrist and elbow were exercised for three to four minutes. To do this I steadied the seat of fracture with one hand, whilst with the other I moved the joints indicated. The movements were those of flexion and extension. On the eighth day I removed both splints, steadied the seat of fracture with one hand, and moved the joints as before. On the tenth day the patient was allowed to make active movements of the wrist and elbow, the seat of fracture being steadied with one hand. From the fourteenth day onwards he was allowed to make these active movements for five minutes daily without having the seat of fracture controlled in any way. On the twentieth day the splints were removed altogether. The arm was taken out of the sling on the twenty-fourth day. He now has a limb which presents no obvious signs of having been fractured; there is no deformity; at no time was there any obvious wasting of muscles. The movement at the wrist was perfect as early as the twentieth day. On the twenty-fourth day there was only a little stiffness in the right elbow-joint. He was able to write with the right hand before the twentieth day. I believe I could have dispensed with the splints on the fourteenth day, as even as early as that date the limb really required no further restraining apparatus.



THE EMPLOYMENT OF SILVER WIRE TO BRIDGE THE GAP AFTER RESECTION OF A PORTION OF THE LOWER JAW.

By SINCLAIR WHITE, M.Ch., F.R.C.S.Eng.,
SENIOR SURGEON TO THE ROYAL INFIRMARY, SHEFFIELD.

The very distressing deformity, the complete loss of masticatory power, and the constant dribbling of saliva which follow the removal of a considerable segment of the lower jaw, are only too well known, and constitute a serious objection to this operation. The desire to overcome these disabilities prompted me in the following case to bridge the hiatus with silver wire, and the gratifying result obtained must be my excuse for sending a report of it for publication.

H. H., aged 9 years, was admitted to the Sheffield Royal Infirmary for a tumour of the lower jaw which had been growing for nearly two years. The growth involved the alveolar border and upper half of the left side of the body of the mandible from the site of the first molar tooth backwards for about 2 in. It had obviously started in the interior of the bone and grown upwards. Two enlarged glands could be felt in the submaxillary triangle. A small portion of the tumour was removed and examined by Professor Beattie, who reported it to be a small round-celled sarcoma.

In view of the pathological finding it became necessary to

Fig. 1.—Tumour and portion of lower jaw resected.

resect widely the involved area of bone, and to remove the lymphatic glands in the submaxillary triangle.

Free exposure was secured by carrying an incision from the left angle of the mouth downwards and backwards to the neck. The bone was divided in front at the level of the left canine tooth, and behind just above the junction of the body with the left ramus, and the tumour together with 2 in. of the body of the jaw, as shown in Fig. 1, removed. The periosteum covering

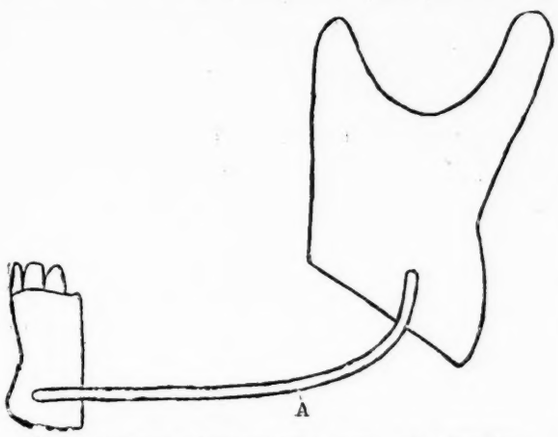


Fig. 2.—Diagram to show position o wire. A = Silver wire.

the lower border of the excised segment was carefully preserved. The resected surfaces of the lower jaw were pierced with a drill to the depth of ¾ in. The drill hole in the body was horizontal, and placed near its lower margin, so as to miss the teeth roots; that in the ramus was vertical and somewhat posterior to the mandibular foramen. The ends of a suitable length of stout silver wire were jammed tightly into the drill holes, and the wire completely covered by suturing together the mucous membranes of the cheek and the floor of the mouth over it. The diagram (Fig. 2) indicates the position and curve of the wire.

A small drain tube was placed in the neck end of the wound and retained for forty-eight hours, and the mouth was rinsed frequently with hydrogen peroxide solution. A little pus formed in the track of the tube, but the wound in the mouth healed quite kindly.

At the present time, except for the skin scar, there is, as the photograph (Fig. 3) shows, absolutely no external deformity. He can open his mouth almost to the full, and

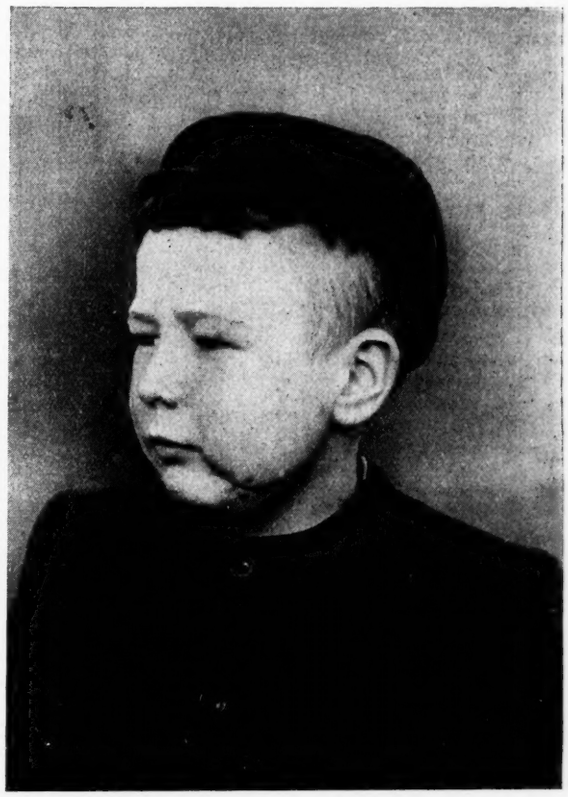


Fig. 3.—Patient after recovery from the operation.

when the jaws are closed the teeth on the right side meet accurately those in the corresponding side of the upper jaw. He is able to bite soft things, and has to be restrained from attempting greater masticatory feats.

I think it is probable that new bone may form around the wire from the preserved periosteum and still further strengthen the mandibular arch.

Unfortunately the majority of cases in which wide resection of the lower jaw is called for are not likely to benefit by the adoption of this procedure. To be successful the wire should be completely buried in healthy tissue, and the wound should heal kindly. These conditions are seldom, if ever, attainable in operations for epithelioma, which is much the most common lesion for which resection is practised.

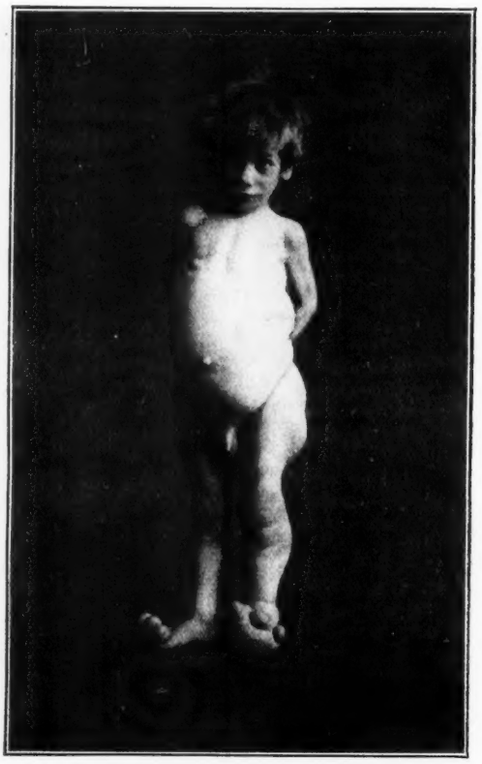
A CASE OF "GIANT FEET."

By HOWARD STEVENSON, B.A., M.B., Ch.B.R.U.I., F.R.C.S.I.,
SURGEON, CHILDREN'S DEPARTMENT, ULSTER HOSPITAL, BELFAST; ASSISTANT TO THE PROFESSOR OF SURGERY, QUEEN'S UNIVERSITY, BELFAST.

The subject of these illustrations is a boy of 4 years of age, who came under my notice early this year.

The history, as given by the mother, was as follows: At birth he was apparently a normal child, with the exception of the deformity of the toes and some enlargement of the ball of the left foot. At the age of 6 months the child was vaccinated, and about the same time the lumps in the leg and groin appeared. She first noticed the swelling in the left groin, and thought the child was ruptured. Gradually the enlargement extended towards the armpit, the arms at the same time getting thinner.

Present condition: The two inner toes of the right foot are normal in development, the three outer very much enlarged and resembling small tubers; they are acutely dorsiflexed, and arise from a much thickened sole pad. The left foot is even more deformed, only the inner toe



escaping, and the characteristics described on the right side are more exaggerated. The left leg, thigh, groin, and infrascapular regions are sites of large fatty tumours, while a single large one is also present on the right buttock. When the child is standing there is well-marked lordosis, due apparently to the weight of the tumour in the groin, and possibly to some intra abdominal growths.

Notwithstanding the condition of its feet, the child is able to run about, play football and other games when shod in a pair of boots resembling horse boots.

The skin is everywhere normal in appearance, and a section from one of the tumours had the ordinary characteristics of a lipoma, and presented no evidence of angeiomatous structure. Dr. Rankin kindly took an *x* ray photograph, and this showed that there was no bony malformation.

THE third edition of the Hungarian *Pharmacopoeia* will come into force on January 1st, 1910.

THE SCIENCE COMMITTEE
OF THE
British Medical Association.

REPORT CXVIII.

SOME OBSERVATIONS ON A TWENTY-FOUR HOURS' WALKING RACE.

BY

F. COOK, B.Sc.; E. G. SCHLEISINGER, B.Sc.;

AND

A. H. TODD, B.Sc.

(From the Physiological Department, Guy's Hospital.)

A TWENTY-FOUR HOURS' WALKING RACE, promoted by the Blackheath Harriers, took place at the Stadium, Shepherd's Bush, on September 17th and 18th, 1909. By the courtesy of the secretary and of the club's medical officer, Dr. Munro, we were enabled to make some observations on the physical condition of the competitors. Inquiries were also made concerning their age, mode of training, diet, costume, and the time and nature of any discomfort experienced during the race. Circumstances prevented our making a complete examination of every man before and after the contest, so that the results lack the exactitude of a laboratory experiment; it is interesting, however, to compare them with the many data that have been published within recent years concerning more strenuous and less prolonged feats of endurance, such as running, cycling, and rowing races. For these reasons the observations made are here recorded.

CONDITIONS.

The men were allowed to bring with them attendants, by whom they were massaged, fed, and cared for generally. The race began at 5 p.m., and continued until the same time next day. The weather conditions were as follows:

Temperature.

	Dry Bulb.	Wet Bulb.
September 17th, 6 p.m.	60.3°	57.0°
September 18th, 7 a.m.	56.4°	54.8°
,, ,, 1 p.m.	62.3°	55.1°
,, ,, 6 p.m.	59.2°	54.3°

On the second day there were five hours of sunshine. There was little wind throughout the race, and the cidner track was considered by the competitors to be in perfect condition.

The greatest distance covered was 127 miles; 24 of the 50 starters walked over 100 miles.

OBSERVATIONS.

1. *Clothing.*

Special leather boots were worn in the majority of cases in preference to shoes; besides shorts, long pants or stockings were generally worn. Most of the men had on vests and sweaters, and some wore hats, especially during the day. Others were more scantily clothed. The weight of clothing carried was therefore considerably less than that of everyday attire.

The advantages of boots were apparently: (*a*) The fixation of the ankle-joint, thus obviating the strain on the flexors and extensors of the foot, which are of no great assistance in walking; and (*b*) the avoidance of excessive friction and consequent blisters. All the men who were asked said that pants were worn for warmth only, not for support.

2. *Cardiac Condition.*

(1) *Pulse.*—The average pulse-rate of competitors before the race was from 70 to 80; two were of low frequency (47, 54) and two of high (112, 128), the latter being apparently due to excitement. At the end of the race the pulses were, as a rule, below 100. One competitor, however, whose pulse was 128 at the start, showed a frequency of 160 at the finish. In another the rate was only 52.

The rate of recovery, measured at various intervals after the end of the race, showed a rapid return to the normal value—for example:

From 96 to 88 in 5 minutes
,, 100 to 80 in 10 ,,
,, 160 to 86 in 10 ,,
,, 90 to 57 in 20 ,,

One interesting exception was that of a veteran competitor, 66 years of age, the recipient of numerous congratulations; his increase in pulse-rate, from 100 at 5 p.m. to 108 at 5.40, is probably explicable by excitement.

Pulse-rates taken during the race were, on the whole, higher than those taken at the end; a gradual increase was shown, reaching a maximum about midnight, and followed by a gradual fall. Recovery was good, or fair, except in the case of one man who fell out complaining of headache as well as gastric pain. At 12.30 a.m., on retiring permanently, his pulse was 110, at 1.30 it was 106, and at 7 a.m., 64 when lying down, 88 when standing. (This case is referred to later.)

(2) *Blood Pressure.*—Before the race the readings were all high, averaging 150 mm. Hg. This is sufficiently explained by the exposure to cold, the excitement, and the novelty, to the men, of the method of examination. These causes have frequently given rise to readings of 200 mm. or more. During the race only one measurement was made—namely, 140 mm. at 10 p.m. Only two readings, on different men, were made immediately after the race; 120 and 115 mm. were recorded. Twelve readings on different men were made up to an hour after the finish:

After a rest of	5	minutes,	96	mm. Hg.	
,, ,,	8	,,	110	,,	
,, ,,	15	,,	115	,,	
,, ,,	20	,,	100	,,	
,, ,,	24	,,	84	,,	
,, ,,	30	,,	110	,,	
,, ,,	30	,,	100	,,	
,, ,,	40	,,	96	,,	
,, ,,	40	,,	70	,,	
,, ,,	50	,,	92	,,	
,, ,,	58	,,	106	,,	
,, ,,	60	,,	98	,,	

It will be observed that the return to normal took place, as a rule, within 10 minutes or a quarter of an hour, and that the reading after 30 or 40 minutes was frequently below the ordinary value at rest.

(3) *Cardiac Impulse, etc.*—Before the race fifteen men were examined. In three cases only was the impulse found external to the nipple line. The sounds were normal. In six cases taken at random after the race, no sign of right-sided dilatation was found. In five out of six the impulse lay 1 in. or more external to the nipple line.

Three men were examined three days after the race. In one case the impulse was found ½ in. below the nipple and external to it, and in the other two it was in the nipple line. None of these men had any symptoms of heart trouble.

General Appearance. — Observations on the men's general appearance were made at intervals throughout the race. Sweating and flushing were noted during the earlier part; during this time they were continuous, and ran parallel in degree. In the later stages of the contest the competitors were repeatedly swabbed with sponges, whether to supplement or remove sweat is uncertain. In the early morning there was some cyanosis.

The main conclusion which we draw from these results is that a walking race such as this involves no undue strain on the heart. We would emphasize the practical value of noting the recovery-rate of the pulse; this is readily obtainable, and is at the same time a reliable guide to the condition of the compensating mechanism of the circulation.

3. *Body Weight.*

Before the race sixteen men were weighed, naked; all but one scaled 10 st. or less. One man, 11 st. 4½ lb. at the start, lost 12¾ lb. during the race. The nine others who were weighed at the end had lost from 6 to 12 lb., although a considerable amount of food had been taken in the meantime.

4. *Urine.*

The urines of nine competitors were examined; in some cases samples were collected during the race as well as at the end.

The *specific gravity* rose, usually to 1030, and in one case to 1038. The *acidity*, *ammonia*, *lactic acid*, and *total nitrogen* have been determined by Mr. J. H. Ryffel and one of us (F. C.); the results will be recorded in a future paper.

Acetone was found in most of the specimens taken towards the end of the race, and many of these also reduced Fehling's solution. The nature of the reducing substance has not been determined. In one case, that of a vegetarian, the "rest" specimen also reduced Fehling's solution.

Albumen was detected in 4 cases only, and in 2 of these mere traces were present.

The rise in the specific gravity is of some importance, as will be shown later. The presence of acetone seems to indicate that the individual's stock of available carbohydrate is exhausted, and that a considerable call is being made on his body-fat.

The relative absence of albumen, taken in connexion with our other observation, tends to support Dr. Collier's view that "functional albuminuria" depends upon right-sided dilatation of the heart and renal congestion.

5. *Food.*

The following are types of the diet taken by competitors during the race:

1. Rice pudding, white of egg, milk and tea, barley-water, orange and quinine wine, brandy.
2. Brown bread and butter, rice pudding, stick-chocolate, meat extract, and weak tea.
3. Vegetarian, including, in the majority of cases, eggs and milk.

One man brought with him, but did not consume, a diet of seed-cake, meat-sandwiches, and some rashers of bacon. Food was taken, chiefly, whilst walking, and in the latter part of the race with increased frequency.

The previous diet of the competitors did not vary in any marked direction from the ordinary.

Causes of Distress.

Blistering of the feet caused much distress, but in one case only, that in which rubber shoes were worn, was this sufficient to cause withdrawal from the contest.

The almost invariable cause of retirement was *abdominal pain*, and this most striking symptom is one which we would emphasize. It was of a griping nature—in general, referred to the epigastrium, accompanied in some cases by vomiting, and in all by nausea. Eructation also occurred. It was particularly noted that in these cases the heart presented no abnormal feature (except in one instance, mentioned above, where the gastric pain was accompanied by severe headache). As explanations of the condition the following suggestions present themselves:

1. The psychical reaction, which normally initiates the secretion of gastric juice, is deficient, owing to the concentration of the attention of the walker upon the race, particularly as food was usually taken whilst walking.

The increased specific gravity of the blood, as evidenced by that of the urine, tends to prevent the secretion of fluid into the stomach, and at the same time promotes the rapid absorption of liquid from the lumen of the gut. Consequently, solid masses of food are present in the stomach, and, stimulating active but inefficient peristalsis, lead to pain.

2. It is generally accepted that during muscular activity the splanchnic vessels are constricted, in order to increase the blood supply of the muscles. From this one may infer anaemia of the stomach, and, consequently, decrease of the flow of gastric juice. Should this condition appear to be causing distress, carminatives should be administered as a rational line of treatment.

3. The acid gastric juice being decreased in amount, and the food being largely of a carbohydrate nature, conditions favouring excessive bacterial fermentation are present. The occurrence of eructations supports this idea, and suggests the administration of charcoal.

The use of carbonates, which seems to be a general practice amongst trainers, is contraindicated by the above considerations.

Inquiry amongst habitual walkers showed that chronic stomach trouble is unusually prevalent at middle age; this condition of "Walker's Stomach" may be due to continued irritation produced as above.

We would therefore suggest that in future contests of this kind competitors should take much more fluid than at present seems to be the custom. The appearance of

intermediate metabolites in the urine, the stiffness of the muscles, and other symptoms, lead us to believe that such products of metabolic activity are inefficiently removed from the system. The introduction of more fluid would remedy this deficiency of excretion, which we hold to be of far greater importance than deficiency of nutrition.

Repeated experience contradicts the popular conviction that large quantities of food must be taken in order to "keep up the strength" in contests of this kind. For instance, soldiers bearing heavy clothing and equipment have frequently marched for many hours with no food, provided that a sufficiency of water is available. Experiments on animals, too, show that external work can be performed for some days on a water diet only.

These facts serve to justify us in advising the consumption of little or no solid food during the race; we think that in this way the gastric disturbances would be entirely obviated. In order to avoid the depressing mental effect consequent upon the withholding of all food, albumen water, or some such preparation might be given. This would only be as a concession to the men's preconceived ideas, and not with the object of providing nutriment. The use of a little alcohol as a readily diffusible and oxidizable stimulant in the last stages of the race seems to be free from objection.

Although a walking race such as this seems to involve far less risk of over-exertion than has hitherto been supposed, it is, as a general test of a man's physical capabilities, in our opinion, much less satisfactory than running, and infinitely less so than a contest of the nature of a football match, which brings into play the full exercise of every faculty as well as that of every muscle. It appeared, indeed, that endurance was the most potent factor in determining a competitor's position at the finish, and it quickly became evident that to estimate a man's chances from consideration of his physical appearance was absolutely impossible. This conclusion was shared with us by several physiologists who were present.

The mental factor in contests of this kind is worthy of careful consideration, the man of fine sensibility needing enormous self-control in order to compete on equal terms with the man of blunter temperament. This was recognized by the Committee in the provision of music during the night, and was also exemplified in the obvious mental and physical improvement which followed the rising of the sun.

The expenses of this investigation were defrayed from the British Medical Association's grant to Dr. Pembrey, who has added to the many other kindnesses shown to us that of suggesting the lines which the present research should follow. We are also greatly indebted to Mr. A. Sandison for valuable assistance in many of these observations.

REPORT CXIX.

AURICULAR FIBRILLATION: A COMMON CLINICAL CONDITION.*

BY THOMAS LEWIS, M.D.LOND., D.SC.WALES.
(From the Research Laboratories of University College Medical School.)

[*A Preliminary Communication.*]

IT is well known that in the late stages of mitral stenosis, and in cases of general cardio-vascular degeneration, the pulse is frequently continuously and extremely irregular. The type of irregularity is remarkable in that in radial and cardiographic curves it defies analysis. The nature of the arterial curves has given rise to the term *pulsus irregularis perpetuus*, and it has been supposed that the rhythm of the heart producing it has its origin in the node of Tawara (hence the term "nodal rhythm"). The condition is extremely common.

Facts are now at my disposal permitting of two conclusions:

I. That a rhythm arising in the neighbourhood of the node gives rise to a totally different clinical picture. This conclusion is based upon a detailed examination (polygraphic and electrocardiographic) of a case of paroxysmal tachycardia, in which it can be demonstrated that auricle and ventricle contract together. This rhythm is a rare clinical phenomenon.

II. That the irregular pulse of mitral stenosis, etc., already referred to, is due to fibrillation of the auricle.

The second conclusion is based upon the following evidence:

1. The clinical irregularity presented by arterial and heart apex curves is unique. The rhythm is entirely disorderly, and the sizes of the beats do not correspond to the pauses which precede them. Fibrillation of the auricle results in a similar action of the ventricle, and its action under these circumstances is unique experimentally.

2. Electrocardiograms taken from patients exhibiting the irregularity show a number of irregular waves, apart from the ventricular curve; they are more clearly defined in diastole. They are found in no other disorder of the heart's action. They disappear when, in a paroxysmal case, the irregularity vanishes, and are therefore due to a *temporary* and disorderly action of some part of the heart wall. Cardiographic curves give no evidence of such a disordered action in the ventricle. Fibrillation of the auricle yields curves which are identical in every respect, and no such curves have been obtained by any other experimental means. Further, the waves on the experimental electrocardiograms can be shown to correspond to the fibrillary movements in the auricle, by means of synchronous tracings.

3. The venous curves in the clinical irregularity is of the ventricular type; all the prominent waves occur during ventricular systole, and there is no wave corresponding to a normal auricular contraction. The same statement applies to the venous curves in fibrillation of the auricle. The clinical and experimental curves are of the same nature.

The facts point clearly to the conclusion that the irregularity in question is the result of auricular fibrillation, and the conclusion affords an explanation of several otherwise obscure facts. It provides us with a rational understanding of the disorderly nature of the ventricular rhythm, for it is dependent upon the irregular auricular movements. It explains the slowing which is obtained by digitalis in those instances in which auriculo-ventricular conduction is known to be frequently impaired—namely, in cases of rheumatic origin; for digitalis is known to increase the hindrance to the passage of the impulses where conduction is already damaged. Further it explains the difference between the type of venous pulse in the irregularity considered, and that due to what is termed "nodal extra-systole." It is in accord with the now generally accepted fact that the rhythm is supraventricular in origin; it harmonizes equally well with the evidence that the auricle is active in certain instances where the irregularity is present—for example, the auricular hypertrophy found at autopsy in cases succumbing with the irregularity present and of long duration. Finally, it suggests a plausible explanation of so-called "nodal bradycardia." This condition may be regarded as auricular fibrillation and spontaneous auriculo-ventricular heart-block. The full evidence, including the curves, will be placed on record at an early date.

* The expenses connected with this work have been defrayed by grants from the British Medical Association and the Royal Society.

THE Herbert Spencer Lecture before the University of Oxford will be delivered by Dr. G. C. Bourne, Linacre Professor of Comparative Anatomy, who has taken for his subject, "Herbert Spencer and animal evolution."

A REUTER'S telegram from Peking states that considerable progress has been made in the suppression of opium smoking in the northern provinces and in Yunnan and Kwangtung, less in the central provinces, and very little in Szechuan, Kweichau, and Shensi.

THE resolution adopted at the meeting of medical practitioners on November 10th, organized by the Chelsea Division of the British Medical Association, as to payment to medical practitioners for midwives' calls, was considered by the Fulham guardians at a meeting on November 19th, but its full discussion was adjourned to a later date. Meantime it may be said that one member of the council held that though medical men could not point to any passage in the Act which gave them a definite claim upon guardians in this connexion, it was the undoubted duty of guardians to guarantee the payment of his fee to any medical man called in to save life during childbirth.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TWO RAPIDLY-FATAL CASES OF PNEUMONIA.

In March last, as I was standing at my hall door one evening bidding good-bye to a patient at 5 p.m., I saw an elderly man filling a bucket of water at the village pump, and chatting to two other men living in the neighbourhood. At 7.15 p.m. I was called to see this man, who was ill. He was sitting in a chair at his door gasping for breath; his face was ashen; he told me he was caught in his stomach and could not get his breath. I tried to get him to lie down in order to examine him carefully, but he could not breathe and jumped up at once into a sitting position. I examined his lungs and found pneumonia at the left base. I injected strychnine and digitalin, gave him medicinal and other stimulants, but in spite of all he died in six hours.

On September 28th, 1909, about 7 p.m., I was called to see a farmer, aged 31, weighing 19 st. On the previous day he had received a great wetting. On September 28th he started to thresh corn in his barn with a horse threshing machine. He fed the machine himself, which, I understand, causes a fearful draught to play all over the feeder, not to speak of the dust that arises during the process. He fed the machine until 6.45 p.m., when he entered his house but did not take any supper. He went up to bed feeling sick and weak; he was shivering very much, and vomited twice. I found him in bed, with a large amount of bedclothes over him trying to get warm; his temperature was 101.6°, his pulse 124, his respirations were 56, but ten minutes after they were 36. He complained of a great pain across the pelvis, sharp pain in the head, and a tightness in his throat, but no pain or stitch in the chest. I found his throat inflamed, and the only thing abnormal in his lungs was a small patch of congestion about 1½ in. square at the base of the right lung; his face was dusky and anxious. I diagnosed pneumonia.

The next morning there was a patch of fine râles at the end of inspiration (about 4 in. by 1½ in.) at the base of each lung close to the spinal column; the temperature was 101°, pulse 128, and respirations 48; he complained greatly of headache and pain over the sacrum. I procured a nurse at once, also oxygen and ice. I had given him the previous evening a diaphoretic and diuretic mixture every three hours, with strychnine and caffeine every six hours, and did everything that could be done for him, but in thirty hours after stopping work he was dying, and died in thirty-five hours.

His face became quite black before death, and immediately after death blood flowed from the mouth. I wet-cupped the back of both lungs but only a little jet-black blood was obtained; it was too thick to flow; he expectorated once thick blood quite black. There was such a layer of fat over his body that not a single vein over the entire arm was visible, even after applying a tourniquet, for I was prepared to bleed him rather extensively if the blood in the veins would flow at all, which was a matter of doubt. I did not open the temporal artery as I considered it would not relieve the right side of the heart. He also received hypodermics of strychnine, and was conscious to the last.

Rhode, King's Co., Ireland. W. T. Mills.

AVULSION OF THE EYEBALL DURING INSTRUMENTAL DELIVERY.

On April 7th this year I attended Mrs. C., aged 34, 10-para, in her confinement. As I had attended this same patient at her previous confinement I knew that she had a generally contracted pelvis. The midwife in attendance told me that the woman had been in labour for fourteen hours, the membranes had ruptured about four hours before my arrival, and since then no progress had been made, although the pains had been strong and regular.

I found the os fully dilated, the presentation vertex, and the position L.O.A.; the head was at the brim, the posterior fontanelle was low down, while the anterior was out of reach. I gave chloroform, put on forceps, and delivered the woman without having to use any excessive force in traction. The rest of the labour was normal, but on examining the child, a well-developed female, I found that the right eyeball was completely dislocated from the orbit, and lying on the cheek below, the optic nerve evidently being torn right across. Under the circumstances there seemed to be nothing else to do but to remove the eyeball, and this I did, applying a dressing to the orbit; there was some haemorrhage from the orbit at first, but this soon ceased.

The child's face was scarcely marked by the forceps, nor was there any displacement of the bones, and both mother and child made an uninterrupted recovery. This accident, so far as I can discover, seems to be unique in the practice of midwifery; it is a most unfortunate accident to happen to any child, but even more distressing, if possible, when the child is of the female sex.

Dunbar. A. E. Turnbull, M B, Ch.B Edin.

LYMPHO-SARCOMA COMPLICATED BY PULMONARY TUBERCULOSIS.

J. C., aged 27 years, a carpenter, became ill with vague pains in the chest, under the sternum and left hypochondrium. His two paternal uncles died of "cancer of the liver" and "heart disease," his mother of cancer of the breast. The patient himself has never been strong and had suffered from anaemia, but there was no history of severe illness.

When he applied to me he complained of cough and pain on deep inspiration, retching, and chilliness. He stated that six weeks earlier he had suffered from "neuralgic pain" over the right side of the abdomen and between the shoulders, with dark-coloured urine. There was dullness over both apices, with a harsh inspiratory murmur. The supraclavicular and cervical glands were the size of walnuts; they were larger on the right side, freely movable, and painless. The sputum contained tubercle bacilli. Temperature 99°, pulse 96. He was ordered a generous diet, open air, and syr. fer. phosph. co. ℥j t.d.s.

During the following month the pains in the chest were sometimes less, but for a week he had slight jaundice, with dark-coloured urine and severe pains in the right hypochondriac and epigastric regions.

On December 17th, a little more than a month from the commencement of treatment, the sputum was reported to be free from tubercle bacilli, but the temperature still rose in the evening to 100° or 101°, and there were nightly sweats; he became very feeble and emaciated, and began to complain of more deep-seated pain beneath the sternum, the swelling of all the superficial glands became more marked, and he was unable to sleep owing to incessant cough. The temperature now rose to 102° at night, and the axillary glands were large and painful, and there was increased vocal resonance over both bases. He complained of severe itching of the skin of the abdomen, arms, and legs; it was unaffected by local applications in ordinary doses of morphine hypodermically; an injection of pilocarpin nitrate produced profuse diaphoresis, and gave immediate relief, lasting for several hours. The jaundice became more intense, and was clearly due to pressure by enlarged glands. He complained of intense pain in the umbilical region.

Four months after the commencement of his illness he developed delusions of persecution with visual and sensory hallucinations. The face and lower limbs became oedematous, there was intense abdominal pain, and he could not bear to have the surface touched. He was very emaciated, feeble, and the icteric tinge much deeper.

During the next month the itching was less severe, the superficial glands became more swollen but less painful. His mental condition became worse, and after a ferocious attack upon his nurses he was removed to an asylum where he died nine months after the commencement of his illness.

Post-mortem examination showed great enlargement of all the lymphatic glands due to sarcomatous growth, with secondary deposits in the liver, spleen and kidneys, and posterior mediastinum; with pressure upon the common bile ducts, bronchi, and inferior vena cava. The tuberculous lesions on both sides were completely healed. During his illness several blood examinations were made, all showing increase of leucocytes and great diminution of red corpuscles. The spleen was never perceptibly enlarged.

Lechlade. F. W. Pilkington.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THE ROYAL INFIRMARY, EDINBURGH.

A CASE OF ACANTHOSIS NIGRICANS.

(Under the charge of Dr. Norman Walker.)

[Reported by T. S. McIntosh, M.B., M.R.C.P.]

The patient, a woman aged 29, unmarried, a washerwoman by occupation, was admitted on April 6th, 1909.

Family History.

There was no history of any skin disease in the family, nor anything else worthy of note.

Previous Health.

This had been good, and there were no serious illnesses to note.

Present Illness.

About eight years ago her attention was drawn to the condition by the fact the palms of her hands were becoming hard and yellow. This seems to have begun on both hands simultaneously. After a time the palms became cracked. The feet began to be affected soon after the hands, the soles becoming hard and thick, and cracking taking place between the toes. For several years before the hands were affected the skin of the body was brownish in places, but the patient did not pay much attention to this. The brown discoloration became gradually more extensive and the colour deeper.

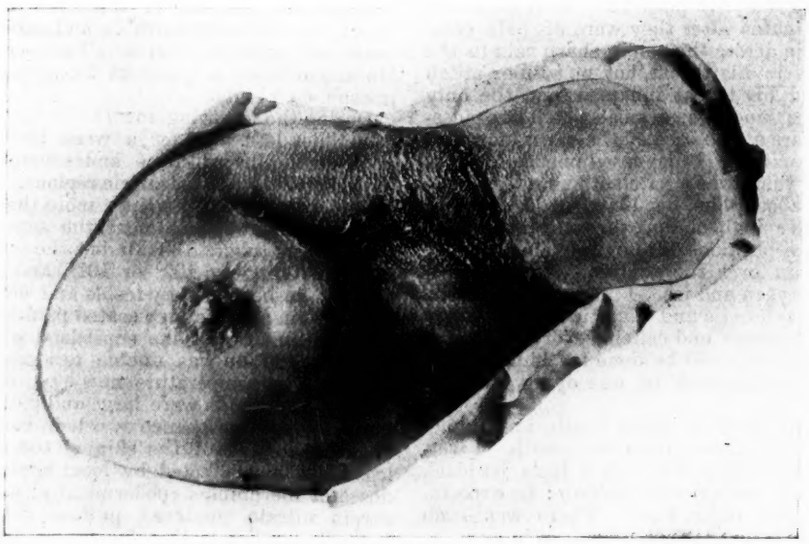


Fig. 1.—Papillomatous condition in the axilla, pigmentation on the chest, and a pigmented wart.

There has never been any itching, and the condition has given rise to no discomfort except stiffness of the fingers and occasional shooting pains in the hands and feet.

Some years ago she was under treatment for two or three months, when the thickening of the palms was greatly reduced, but it gradually increased again after the treatment was stopped. Lately the hands had become so stiff, especially in the morning, that she had found it difficult to perform her work. Since last year she had had from time to time attacks of what she thought were rheumatic pains in shoulders, arms, and legs in damp weather.

Condition on Admission.

The face and neck are of a uniformly dark colour, with a broad band of darker pigmentation across the forehead. On the body there are numerous patches, which at first sight look simply like patches of pigmentation; but when looked at more closely and the finger run over them they are found to be very slightly raised and made up of innumerable minute, flat-topped, warty growths, giving a velvety appearance to the patch.

The front of the chest as a whole is normal in colour, and the nipples and areolae are not unduly pigmented, but there is a small pigmented wart on the front of the chest and pigmented patches of the kind described on the anterior axillary folds. There is a line of pigmentation running down the mid-sternum and spreading out on the epigastrium into one of these velvety patches. The umbilicus is deeply pigmented, and slightly raised; pigmented bands run from it down to the symphysis pubis and up to join the epigastric patch. There are similar bands coming round from the back in a girdle-like fashion, more or less parallel to the costal margins, and there is a large patch on the left iliac fossa. The upper part of the back is not affected, but there are irregular bands and patches in the lumbar region and on the buttocks.

In the axillae the condition is most marked, the pigmentation being very deep and the papillomatous character of the patches much more apparent. On the flexor aspects of the forearms also there are well-marked patches in which the papillomatous character is more marked than on the trunk, though not so marked as in the axillae. There are a few similar patches on the extensor aspect of the arms.

The palms of the hands show very marked thickening of the epidermis. The thickening is irregular, showing little mounds and hollows. The skin of the palms is of a yellow colour and hard and horny, and some of the most prominent elevations have a worm-eaten or honeycombed appearance. Passing from the palms on to the wrists, the thickening gradually diminishes and shades off into the slightly-raised velvety patches on the forearm.

On the backs of the hands, especially over the heads of the metacarpals and along the radial sides of the thumb, index, and middle fingers, the epidermis is raised in flat, warty prominences of a yellow colour.

The anterior aspects of the knees are rough and pigmented. There are large corns on several of the toes of both feet, and the skin of the soles is markedly thickened and yellow, especially over the balls of the toes, the outer margin of the sole and the heel.

There are no patches of leucoderma on the skin of any part.

The posterior part of the hard palate is yellowish in colour, otherwise there is nothing abnormal about the mucous membrane of the mouth.

Microscopic Examination.

A small portion of one of the warty patches in the axillae was removed and showed the characteristic microscopic appearances of acanthosis nigricans. There is great elongation of the papillae, with marked hypertrophy of the prickle-cell layer ("acanthosis"), especially in the interpapillary processes. There is also well-marked hyperkeratosis. There is abundant infiltration, with small round cells around the vessels and hair follicles and many cells containing pigment in the corium, most abundant just under the palisade layer of the epidermis; but there is no marked increase of pigment in the palisade layer itself.

Digestive System.

Most of the cases of acanthosis nigricans which have been examined *post mortem* have shown malignant disease of the stomach, liver, or other abdominal organ. Accordingly the digestive system and the abdomen generally were carefully examined for any evidence of malignant disease.

About a year ago the patient began to be troubled with pain coming on very shortly after food. The pain was felt in the region of the xiphisternum, sometimes shooting under the right breast and sometimes under the left breast, and sometimes through to between the scapulae.

The appetite has never been much impaired. At first she used to vomit very frequently, and this relieved the pain till the next meal. There was never recognizable blood in the vomit, but once or twice an appearance like coffee grounds. She says the vomit was always very "bitter" and burning. She found milk was practically the only thing she could tolerate, and lived mainly on milk for about three months. She then consulted a doctor, who put her on ordinary light diet and prescribed medicine. This greatly relieved her, but she continued to have the pain at times, being always relieved, however, by taking another bottle of the medicine. At the beginning of this digestive trouble the pain was sometimes very sharp and severe; lately there has been none of this severe pain, but sometimes a sensation like a load lying in the lower part of the chest. She has not suffered from vomiting for several months, but sometimes has a feeling of nausea.

The tongue is rather large, flabby, and indented by the teeth, pale, and slightly furred with red papillae standing out prominently. The stomach is normal in size and position; there is no tumour to be felt, and there is no splashing. There is a little tenderness below and to the right of the xiphisternum, and just under the left costal margin. The liver is normal in size, cannot be felt, and no irregularities of its outline can be made out by percussion. There is nothing abnormal to be made out in connexion with any of the other abdominal organs.

Fig. 2.—The appearances on the hands.

The patient was given Ewald's test breakfast after fasting for twelve hours, and the stomach contents were drawn off three-quarters of an hour later.

The stomach contents smelt strongly of butyric acid, contained only a trace of free hydrochloric acid, and no lactic acid. Microscopically, no sarcinae were seen, a fair amount of yeast was present, and Boas-Oppler bacilli were fairly abundant. There were no oil drops or vegetable matter, nor anything to indicate retention of former meals in the stomach.

The stomach contents after a second test meal two or three days later showed the same characters as after the first, except that no Boas-Oppler bacilli were seen.

A third test meal was given some weeks later, and this time free hydrochloric acid was abundant. No Boas-Oppler bacilli were found, and otherwise the characters were the same as in the previous tests.

Fig. 3.—Appearances like large corns on the soles and the thickening of the skin over the heels.

The examination, therefore, was not conclusive either of the presence or absence of malignant disease, but it is an interesting fact that in this case of a disease which is frequently associated with cancer of the stomach there should have been found indigestion, and on two occasions almost complete absence of hydrochloric acid, and on one occasion presence of Boas-Oppler bacilli.

The patient, however, improved greatly in genera condition during her stay of twelve weeks in the hospital; she gained 8½ lb. in weight, and after the test meal given a day or two before leaving abundant free hydrochloric acid was found, so that one would certainly not be justified in diagnosing carcinoma.

Examination of the blood showed:

Red blood corpuscles	4,420,000
Haemoglobin	75 per cent.
Colour index	0 85
White blood corpuscles	7,200

The film showed red cells rather deficient in haemoglobin, and varying considerably in size, many being small. The proportions of leucocytes are as follows:

Polymorphonuclear	54 0 per cent.
Lymphocytes	42 ,,
Eosinophiles	3 ,,

The other systems show nothing abnormal. The urine is normal.

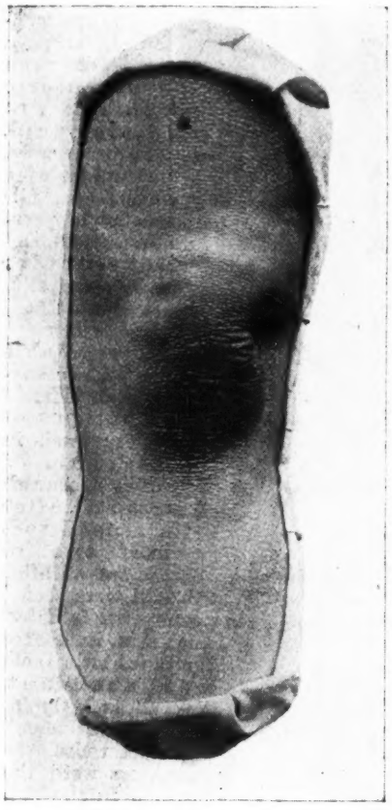


Fig. 4.—The thickened pigmented patch on the knee and a wart on the anterior aspect of the thigh.

Treatment.

For the hands and feet, starch poultices, salicylic-creosote plasters, and salicylic soap plasters were tried, and lastly, 10 per cent. salicylic collodion. The last-named has been the most successful, and the epidermic thickening has greatly diminished under that treatment. The other parts were treated with boro-calamine lotion.

Adrenalin chloride was tried internally, but did not seem to have any effect. The pigmentation on the forearms and trunk has diminished slightly, but the warty, pigmented patches in the axillae do not seem to have altered appreciably.

The patient was discharged on July 2nd.

The accompanying illustrations are photographs of casts made from the patient.

Reports of Societies.

PATHOLOGICAL SOCIETY OF MANCHESTER.

Wednesday, November 10th, 1909.

Dr. W. E. FOTHERGILL, President, in the Chair.

Encephalomyelitis.

DR. GEORGE MURRAY and Professor LORRAIN SMITH gave an account of a case of encephalomyelitis. The patient, a woman, aged 18 years, complained of failure of vision in the right eye, which became blind in four days. Then followed blindness in the left also, and loss of power of the left side of the face and of the right arm and leg. On the eleventh day she became deaf. On admission to the Manchester Royal Infirmary she was blind and deaf; pupils dilated, only slight reaction to light on right; fundus normal; paresis of left face and of right arm and leg; knee-jerks exaggerated, especially on right; ankle-clonus and Babinski reflex present on both sides, but more marked on right; apparently no anaesthesia. Fluid obtained by lumbar puncture in excess but normal in character. Temperature generally subnormal. Later lost sphincter control and died from respiratory failure a month after onset. Sections of cord and brain, stained by Weigert's myelin method, showed irregular areas of myelitis. In the cord in the cervical region the anterior and lateral, in the lumbar the lateral and posterior columns were chiefly affected. The fibres had to a large extent disappeared, and in the more recently affected areas large numbers of compound granular corpuscles were found scattered through the tissue and crowding the spaces of the perivascular sheath. The vessels were engorged, but the walls were not thickened, and there were no definite signs of thrombosis. An examination for microbes by Gram's method gave negative results. In the optic chiasma and in both auditory nerves recent myelitis was found, and in both cases the fibres had completely disappeared. There was an increase in the neuroglia cells in these areas. Sections from the white matter of the occipital lobe were also shown to demonstrate a myelitic focus. The changes in the brain were not so advanced as those in the cord and in the optic chiasma. The areas affected showed macroscopically small rounded patches of congestion without definite softening.

Disease in Ancient Egypt.

Professor ELLIOT SMITH gave an account of pathological conditions which he had met with in examining the bodies of ancient Egyptians. Tuberculous disease was very rare, only 5 cases having been found among more than 10,000 skeletons examined; 4 were cases of spinal caries and 1 of hip disease; the earliest was dated about 3,500 B.C. No evidence whatsoever of syphilis had yet been found. Osteoarthritis was extremely common, but only one case of true gout had been observed, and that was in a Christian immigrant into Egypt. Dental caries was exceedingly rare in prehistoric Egyptians, but quite common in the aristocratic classes in historic times. Twelve cases of mastoid disease were seen, in all of which the pus found a natural outlet in Macewen's triangle. A number of other conditions, including osteo-sarcoma (3,000 B.C.), calculi of bladder, kidney, and gall bladder, talipes, and prolapse of uterus and rectum, were referred to.

Splenic Anaemia.

Dr. CUNLIFFE described a case of anaemia with enlargement of the spleen occurring in a girl aged 13 years, and presenting the features not of splenic anaemia of adults, but of splenic anaemia of infancy. A marked feature of the blood picture was the enormous number of nucleated red cells, chiefly of the normoblast type, with a certain proportion of megaloblasts. There were no signs of infantilism such as had been recorded by Cowan in two cases of similar nature.

ROYAL SOCIETY.

Thursday, November 11th, 1909.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair.

Division of Spirochaetes.

MR. H. B. FANTHAM, D.Sc.Lond., and Miss ANNIE PORTER, B.Sc.Lond., communicated a paper on the modes of division of *Spirochaeta recurrentis* and *S. duttoni* as observed in the living organisms. The observations recorded were made on living spirochaetes, the examination of living material being imperative, as results based only on stained preparations were not always reliable. Both longitudinal and transverse division occurred in spirochaetes, as seen in *S. recurrentis*, *S. duttoni*, *S. anodontae*, and *S. balbianii*. A periodicity in the direction of division was exhibited by *S. recurrentis* and *S. duttoni*. At the onset of infection longitudinal division occurred; this was followed by transverse division of the spirochaetes when the infection was at its height. As the infection drew to an end, and there was a diminution in numbers of the parasites, there was a reappearance of longitudinal division. Naturally there were times when both forms of division occurred together. The observations relating to periodicity were made on peripheral blood of the host. The actual processes of division, and the movements of the parasites meanwhile, were set forth in detail in the paper.

Carbon Monoxide in Blood.

Dr. G. A. BUCKMASTER and Mr. J. A. GARDNER, in a paper on the supposed presence of carbon monoxide in

normal blood and in the blood of animals anaesthetized with chloroform, said that in a paper published in 1898 Desgrez and Nicloux stated that the normal blood of Paris dogs contains about 1.6 c.cm. of carbon monoxide per litre, and that when the animals were anaesthetized by chloroform the amount increased to 2·5–6 c.cm., according to the duration of anaesthesia. Their method of estimating carbon monoxide consisted in passing the blood gases over iodine pentoxide at 150° C. and determining the iodine liberated by the method of Rabourdin. The authors had carefully reinvestigated the question, making use of Haldane's method of estimating carbon monoxide by means of diluted blood, after having previously ascertained that far smaller quantities of this gas than those found by the French observers in normal blood gases could be readily detected. They found that neither normal cats' blood, nor the blood of cats anaesthetized by chloroform, contained any detectable trace of carbon monoxide. They found also that most of the chloroform in the blood came off with the gases when extracted at 40° C. In order to arrive at an explanation of Nicloux's results they (1) repeated his experiments with variations, investigated (2) the effect of heat on iodine pentoxide, (3) the effect of chloroform vapour on iodine pentoxide, and (4) the effect of chloroform vapour on alkalis. The latter experiments showed that chloroform vapour was readily decomposed by passing over solid potash, and also by the reagents used in gas analysis, with the production of carbon monoxide. They concluded from their experiments (1) that chloroform is not decomposed in the blood with formation of carbon monoxide, (2) the iodine liberated in the experiments of Nicloux was due to some extent to the direct decomposition of the iodine pentoxide by the chloroform vapour in the blood gases, but mainly to the carbon monoxide produced by the action of this chloroform on the solid potash over which he passed the blood gases in order to free them from carbon dioxide.

Cholesterol.

In continuation of a research on the origin and destiny of cholesterol in the animal organisms, Messrs. G. W. Ellis and J. A. Gardner, in a paper dealing with the excretion of cholesterol by the cat, described the results of a number of estimations of the cholesterol content of the faeces of cats fed on a variety of diets, animal and vegetable, of known cholesterol content. It was found that cats behaved similarly to dogs when fed on meat diets, but the tendency for the change of cholesterol into coprosterol appeared to be greater in the case of cats. The change was, however, never complete unless the diet contained a considerable amount of fat. In all these experiments the total cholesterol and coprosterol excreted was considerably less than that taken in with the food. Without considering the cholesterol poured into the gut with the bile, the percentage deficit was 50 to 60, an average loss of about 0·08 gram per day. In the case of vegetable diets free from cholesterol or phytosterol the weights of food necessary to keep the animals in condition were larger, and the amounts of faeces very much larger, than in the case of meat diets. Small amounts of cholesterol were excreted, averaging about 0·03 gram per day, but no change into coprosterol took place. In the case of artificial diets to which measured quantities of cholesterol or phytosterol were added, no excess of cholesterol above that administered was recovered from the faeces. The bearing of these results on hypotheses advanced in former papers of the series was discussed.

MIDLAND MEDICAL SOCIETY.

Wednesday, November 17th, 1909.

Mr. Frank Marsh, President, in the Chair.

The following were among the exhibits:—Mr. Billington: A child, aged 2½ years, the sixth of a family of seven, the rest being normal. Its fingers and toes were perfectly natural and showed no trophic disturbance, but each nail closely resembled the claw of a dog, being raised, almost black in colour, very hard, and projecting some distance beyond the extremity of the digit. Dr. J. G. Emanuel: A girl, aged 4, with an *Enlarged cirrhotic liver* and spleen and a slight amount of secondary anaemia. The condition was first noted three and a half months ago, when the child came under observation for an attack of catarrhal jaundice lasting a fortnight. The liver and spleen had not diminished in size under antisyphilitic treatment. There was reason to suspect that the child had been allowed to take small quantities of beer (it was impossible to compute how often), and the possibility of alcohol as the cause of the cirrhosis was suggested. Mr. Victor Milward: A case of rupture of a branch of the superior mesenteric artery in a man aged 49. The haemorrhage was excessive, but the pulse was never more than 70 per minute. Great difficulty was experienced in locating the torn vessel, and 5 pints of normal saline solution were infused into the internal saphenous vein. Ultimately recovery was uneventful. Dr. Sawyer: A boy, aged 18, showing *Rheumatic nodules* on the hands, fingers, wrists, elbows, knees, ankles, feet, and hands. They had been present six months, coming on two months after an attack of acute rheumatism and endocarditis of the mitral valve. The nodules varied in size from that of an almond to that of a small shot. Dr. Douglas Stanley: A child, aged 4, with signs of *Intrathoracic pressure* of nine months' duration. There was great oedema of the face and eyes, engorgement of the superficial veins of the neck, thorax, and abdomen, submanubrial dullness, and a spasmodic cough. At first the cause of these symptoms was thought to be a sarcoma of the thymus, but there had been such marked improvement in the course of some weeks that this diagnosis was no longer probable. Possibly the condition was due to tuberculous glands. Mr. Seymour Barling: A specimen removed from a man, aged 43, who twenty years ago suffered from an attack of "dysentery," though he had never been out of England. It showed a fibrous thickening of the walls, narrowing of the lumen, ulceration and congestion of the mucous membrane. There was a two years' history of passage of liquid motions with much blood and mucus, producing great anaemia and suggesting malignant disease. Left inguinal colotomy was performed, with resection of the bowel to the anus, and the patient made a satisfactory recovery. Dr. O. J. Kauffmann: A case of *Syringomyelia* in a girl, aged 15, of seven years' standing. The right pupil and palpebral fissure were smaller than the left, and there was very marked kyphosis of the cervico dorsal region, coupled with scoliosis below. No trophic joint lesion was present, but there was a great tendency to almost painless sores on the right limbs and the right buttock. The onset and progress had been gradual, and there had been no pain at any time. Dr. Smallwood Savage: A large hydrocephalic fetus, which had caused an *Obstructed labour*. The patient was admitted into the Birmingham Maternity Hospital with the body and limbs hanging outside the vulva, but the large head, reaching 3 in. above the umbilicus, obstructed the completion of delivery. An incision was made over the cervical spine, a trocar and cannula inserted into the brain, and 3 pints of cerebrospinal fluid were withdrawn. The collapsed head was delivered with ease.

CLINICAL SOCIETY OF BATH.

Friday, November 5th, 1909.

Dr. T. Wigmore in the Chair.

Dr. G. Hely-Hutchinson Almond read notes of a case in which a boy aged 19 had a red count varying from 9,400,000 to 11,900,000 cells per c.mm., with haemoglobin 145 per cent., and an enlarged spleen. There was marked clubbing of the fingers, and other symptoms and signs of venous stasis had been present since birth. There was increased dullness to the right of the sternum, and he thought the case was probably one of erythrocytosis due to congenital heart disease. Dr. Munro, in a paper on *Vaccine therapy*, suggested that pustular acne of the face in young women without blackheads, the back and chest being clear, might be connected with staphylococcal infection of the blood from accompanying purulent cervical endometritis. He reported a case of so-called carbuncle of the nose, due to *Micrococcus catarrhalis*, cured by two inoculations of auto-vaccine, and drew attention to the value of tuberculin in certain cases of ulcerative endocarditis and in persistent chronic nasal and post-nasal catarrh. One such case had greatly

improved after seven years' previous treatment, including removal of the turbinated bones and draining frontal and sphenoidal sinuses and maxillary antra ineffectually. The following were among the exhibits:—Dr. WATERHOUSE: Case of *Rheumatoid arthritis* in a child aged 3, in whom great benefit had resulted from the administration of large doses (up to 3 drachms daily) of the syrup of iodide of iron. Mr. FORBES FRASER: A girl with early macrochylia and macroglossia. Dr. LECKIE: A boy run over by a bicycle four months previously and rendered unconscious for some hours. Recovery took place, but he had since returned to hospital with headache and double optic neuritis. Dr. LINDSAY: A woman aged 36, with chronic disease of the joints, which had started in the great-toe joint at the age of 14. The teeth were much ground down and there was persistent albuminuria with granular casts. Mr. FORBES FRASER: Microscopical sections from a *Sebaceous adenoma*, removed from a man and showing early malignant degeneration. Mr. TERRY: A tumour, weighing 26 oz., removed from the left lobe of the *Thyroid gland* in a young woman from whom the right lobe was said to have been previously removed. Mr. LACE: (1) A cylindrical-celled carcinoma, apparently arising at the origin of the appendix. (2) A gall stone which had caused complete intestinal obstruction in an old lady. Five years before she had an attack, during which she passed bloody discharge from the bowel, a tumour being felt in the caecum. At that time a diagnosis of malignant disease of the bowel was made.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Friday, November 5th, 1909.

Dr. H. JELLETT, President, in the Chair.

DR. TWEEDY exhibited a specimen of an ordinary *Wertheim's operation* in a woman about 24 years of age. There was very considerable ulcerative cancer spreading into the broad ligament. The operation went well until he began to remove the cervical part of the uterus. The cancer then broke away, and he found the end of the vagina. He was able to shut off the intestines, and the woman did not become infected. What was particularly interesting was that he traced up the ureter, and found that while the cancer spread above and below the ureter, the latter was not diseased. The ureter was so intimately associated with the cervix that in dealing with it he had to hug the cervix to avoid the ureter. He pushed down the bladder far into the vagina, and got his finger between the vagina and bladder. He worked the bladder laterally, and was able to dig the ureter completely out of the cancer, and took away the macroscopic evidence of the disease. That was three weeks ago. The patient had gone on very well until a week ago, when her temperature ran up, and a fetid discharge arose. Though she could now hold a certain amount of urine in the bladder. still a quantity passed away, and he had no doubt he was now dealing with a ureteral fistula. In the majority of cases such fistulae healed spontaneously, but from the accounts which he had read on the subject he found that the ureter practically never became patent again. The urinary discharge would dry up. The ureter cicatrized and the kidney ceased to secrete. They would only get a hydronephrosis so long as there was some fluid passing through the ureter. If they did not allow a drop to escape through the ureter the kidney would not secrete urine; and his hope was that the cicatricial matter would absolutely occlude the ureter and the kidney would become inert. Sir WILLIAM SMYLY said ureteral fistula was a risk that any one was liable to who undertook Wertheim's operation. Recently, when assisting in a case where the ureter had been cut accidentally and where implantation into the bladder was impossible, he had persuaded the operator to ligature it with silk and fix it in the abdominal wound. In that case it was found necessary afterwards to extirpate the kidney. Sir CHARLES BALL said he had once transplanted the ureter into the bladder, and as far as he knew no leakage occurred, and no obvious kidney tumour developed. He would be interested to see the result in Dr. Tweedy's case, as it was difficult to understand why hydronephrosis should not occur when the ureter was completely blocked, since it occurred where the obstruction was only partial. Dr. FITZGIBBON recalled a case of Sir Arthur Macan's in which the urine continued to be secreted as freely as ever from the kidney belonging to the detached ureter, and showed no sign of cicatrization of the cut end of the ureter, or blocking off of the kidney. Dr. JELLETT said one could understand that there was a kind of race between the function of the kidney and the destruction of the substance by back pressure; he would be inclined to think that hydronephrosis would result before the destruction of the kidney substance. Dr. TWEEDY, in replying, said that he had in his remarks exactly summed up the conclusions of the experiments that he had read, the latest being from the Johns Hopkins Hospital within the past six months. The ureter was simply cicatrized over, there was no potency, and the kidney ceased to secrete. Sir William Smyly's case was not on all-fours with the condition of spontaneous healing. It was impossible to get the ureter to unite permanently by tying.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Thursday, November 11th, 1909.

Dr. GEORGE WILKINSON, President, in the Chair.

THE following were among the exhibits:—Dr. A. E. BARNES: Specimens from a case of *Haemorrhage into the suprarenals*. During life there were symptoms of intestinal and gastric disturbance, absence of free hydrochloric acid, presence of a small amount of lactic acid, total acidity below 10, connective tissue and undigested muscle fibres in the faeces, also slight excess of fats and soaps, in the urine excess of glycuronic acid, very marked indican reaction, urobilin, and Cammidge's pancreatic reaction. On autopsy there were found atrophy of the gastric mucosa, catarrhal changes in the pancreas, nodules of lymphomatous tissue in the liver where the capillaries also contained many lymphocytes. Dr. ARTHUR HALLS: A similar case which showed during life symptoms of enteric, but there was no serum reaction. Dr. H. LEADER: A third case of the same kind in a child aged 6 days. Streptococci were found in the kidneys. The PRESIDENT: A child with *Separation of the lateral cartilages of the nose* and of the nasal spines, due to a failure of approximation of the two mesial masses of the fronto-nasal process. There was also a slight notch in the centre of the upper lip and between the two halves of the premaxilla. Dr. A. HALL and Mr. GARRICK WILSON: A man who had had a large hard mass in the abdomen which could be easily palpated, and for which a laparotomy was performed. It was thought to be a carcinoma of the stomach wall, and as a gastrectomy was impossible owing to firm adhesions and the presence of numerous enlarged glands in the gastro-hepatic omentum, a posterior gastro-enterostomy was performed. In the course of a few weeks the tumour, which turned out to be inflammatory in nature, entirely disappeared, and the patient's weight increased from 7½ st. to 10 st. 9 lb. Dr. A. E. NAISH and Mr. GARRICK WILSON: A case of *Cervical rib* in a girl. The symptoms were pain in the right shoulder after a long swim and weakness in the hand and arm. The diagnosis was confirmed by an *x*-ray photograph, which also showed a very small cervical rib on the left side. The rib was removed by operation, and with the assistance of massage and the constant current the muscles of the hand and arm gradually regained their normal strength. Mr. W. S. KERR: A case of *Syphilitic perichondritis* of the larynx in a woman. There had been a large gummatous ulcer at the base of the tongue which had healed under potassium iodide. The right arytenoid was very oedematous, and the movements of the right cord impaired. Mr. GRAHAM SIMPSON the following specimens: (1) A hydrocele with much thickened walls; (2) a haematocele with calcified tunica vaginalis. Professor RALPH P. WILLIAMS, in a paper on *Open-air recovery schools*, said that Mulhausen, Gladback, Elberfeld, London, Halifax, Norwich, Bradford, and Sheffield had now established such institutions. The arrangements in the Sheffield school were as follows: (1) Selection of children: Fifty children, suffering from the following physical defects, were provided for: pulmonary tuberculosis, 3; tuberculous glands, 2; anaemia and bad nutrition, 20; oral sepsis, 13; convalescing from acute disease, 2; convalescing from operations, 2; doubtful cases of phthisis, 8.

(2) Teeth examination: All the children were examined by Mr. Frank Harrison and the worst cases operated on. (3) All lessons taken in the open air, except in severe weather, when an old well-ventilated school building was available. (4) Three good meals provided, taken in an open shed facing south. (5) Shower-baths provided, one warm shower for each child once a week. (6) Educational work limited to three and three-quarter hours daily. (7) Each child was provided with a numbered raincloak, chair, blanket, brush and comb, toothbrush, towel, and bath towel. (8) Two hours' rest after the mid-day meal; 90 per cent. of the children slept all the time. The children were weighed every fortnight, and the 29 girls and 21 boys increased on an average 2.6 kilos (5¾ lb.) during the period the school was open—that is, June 21st to October 29th—compared with an average of 1.1 kilo increase put on by children of the same age attending ordinary elementary schools. The parents contributed towards the expense of feeding the children sums varying from 2s. 6d. to 6d. a week. He hoped that schools of this type would be erected in country districts surrounding all cities, where badly-nourished children could recover and be educated who otherwise would become a burden on their relations or on the State.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

Thursday, October 28th, 1909.

Dr. David Rennett, President, in the Chair.

The President delivered a valedictory address, in which he dealt with the progress of sanitation in the city of Aberdeen during the past sixty years. At the onset he gave an interesting historical survey and described the social and other conditions which led to the high morbidity and mortality rates prevailing up to the middle of last century. The first medical officer of health of the city, Dr. Francis Ogston, father of Emeritus Professor Ogston, was appointed to that post as early as 1831, but possessed only very limited power. An entry in the city accounts in the year 1839 of £1,032 16s. 10d., as having been paid to forty-five scavengers, showed that some systematized method of municipal cleansing was being attempted. The development of the drainage system of the city, introduction of water supply, provision of isolation hospitals, etc., were all traced, and the effects of them on the mortality-rates was clearly shown by a series of graphs and charts. There was one point of special interest in reference to the infant mortality-rate. Like that of phthisis, scarlet fever, typhus, and typhoid, it showed a steady decrease down to the passing of the Education Act in 1872, but thereafter and until a few years ago it remained almost stationary.

ROYAL SOCIETY OF MEDICINE.

Section of Surgery.

Friday, November 19th, 1909.

Mr. Rickman J. Godlee, President, in the Chair.

Professor Thomas Jonnesco, of Bucharest, gave an address on his method of high *Spinal analgesia* with stovaine and strychnine; it embodied for the most part the article by him which appeared in the British Medical Journal on November 13th. He showed a number of lantern slides to illustrate the success with which every region of the body could be brought under the influence of the drug injected, either in the interval between the first and second dorsal vertebrae, or between the twelfth dorsal and first lumbar. Craniectomy, gastro-enterostomy, splenectomy, and hysterectomy could all be performed without interfering with the patient's inclination to smile. At the conclusion of his address a number of questions were addressed to him by members of the Section, and by anaesthetists whose presence had been invited. Sir Watson Cheyne, proposing a vote of thanks to Professor Jonnesco, said that he had undoubtedly given an impulse to the method of stovainization in this country. Dr. Dudley Buxton said that, without accepting all M. Jonnesco's conclusions, it was possible to assure him of the great interest his communication had evoked.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

Northern and Midland Division.

Thursday, October 21st, 1909.

Dr. A. R. Douglas in the Chair.

Dr. Douglas, in a paper on the *Care and training of the feeble-minded*, outlined the history of the subject. The honour of being the first to recognize the condition of the imbecile belonged to Itard of the Bicêtre. At a later date there followed the formation of schools in England, Germany, and Switzerland, and afterwards in America and Scotland. These were all due to private charitable enterprise; and though brilliant results were obtained in them in many cases, the possibilities of the education of the idiot were somewhat overestimated. Care and protection should be the first consideration, special attention being paid to their hygienic surroundings and their health. An important factor was the bringing of the idiot into the society of his equals—a condition of healthy rivalry being thus induced amongst them. The control and discipline of institution life likewise had a beneficial effect, tending to encourage industry, honesty, and self-respect. At the Royal Albert Asylum (where the meeting was held) an attempt was first made to cultivate the senses, to perfect muscular co-ordination, and to establish normal relations between brain and hand. This was followed by the more serious problem of learning to read and write in the case of those able to get thus far. Probably the most interesting part of the institution was the Herbert Storey Industrial Schools and Workshops. In these boys were trained in carpentry and wood-carving, the making of clothes, boots and shoes, baskets, mats, etc., book-binding, printing, and other things. The estate also provided work in the gardens and on the farm for lads who showed an aptitude for it. In concluding his paper, he asked: "Besides training and educating these obviously defective children, are we doing anything for future generations?" and had to answer it by saying, "We are not."

Dr. D. W. Hunter showed a series of photographs illustrative of *Mongolian idiocy*, and recorded the following conclusions: The disease was not an entity; its characteristics could all be paralleled in the fetus. In short, the Mongolian idiot was a grown-up fetus. Some morphological aspects of the condition suggested that the orang-outang possibly approached much nearer the line of human ancestry than either the gorilla or chimpanzee.

The National Dental Hospital and its connected college held its annual dinner at the Trocadero on November 19th. Sir Thomas Barlow, consulting physician to the hospital, occupied the chair, and in proposing the toast of the evening dwelt on the importance of the medical inspection of schools, which, he said, possessed potentialities for good that no one connected with medicine should ever fail to emphasize. Education of children in the care of their teeth seemed to him almost more important than anything else, and on this account he regretted exceedingly that the London County Council, among other authorities, had not seen its way to including a definite system of dental inspection in its general scheme. The matter was of such national importance that, however meagre the pay offered, dentists should willingly assist educational authorities; dental inspection once established, its value would be recognized and adequate remuneration follow. In acknowledging the toast Mr. Sidney Spokes, the Dean of the hospital, appealed to old students to assist in raising funds necessary for some structural improvements in the school and hospital, and then introduced an interlude in the form of a prize distribution. The remaining items on the programme included a toast to "Past and Present Students," in proposing which Dr. Dudley Buxton, speaking of the proposed legislation regarding anaesthetics, deprecated the introduction of any provision which would interfere with the right of Licentiates of Dental Surgery to administer nitrous oxide gas. The toast was acknowledged by Mr. Sidney Rose, one of the surgeons to the institution, and by Mr. C. L. Donne, a student, who had previously been acclaimed in connexion with the prize distribution. He carried off not only the Rymer medal for the best student of the year, but other medals in five different subjects.

Reviews.

THE LAST ILLNESS OF CHARLES THE SECOND.

FOR nearly two centuries and a half the death of Charles II has furnished matter for discussion to historians. So conflicting are the accounts of his symptoms, and so diverse the opinions held by contemporaries as to their cause, that it has been almost impossible to form a clear idea of the real nature of the King's last illness. Most people, both at the time and for many years after the event, believed that Charles had been struck down by apoplexy, a fate which they charitably regarded as the judgement of Heaven on a misspent life. It may be noted, by the way, that the term "apoplexy" was used by English physicians of that day as including all kinds of sudden seizures marked by convulsive or paralytic phenomena, with or without loss of consciousness. It is true that there were rumours of poisoning, but these inevitably followed the death of any important personage at that period. Dr. RAYMOND CRAWFURD, in a recent work,[1] passes in review all the available evidence, showing much critical insight in estimating its value. Rejecting the theory of poison as hardly worthy of serious discussion, he holds, after careful consideration of the facts, that the theory of apoplexy must also be ruled out of court. After studying and comparing the various accounts given by eye-witnesses and contemporaries (such as Lord Ailesbury, Barillon and Van Citters, the French and Dutch Ambassadors, and Sir Charles Scarburgh, the King's first physician) Dr. Crawfurd concludes that "one may assert with considerable confidence that (the King's) death was due to chronic granular kidney . . . with uraemic convulsions." Undismayed by Macaulay's warning, he has attacked the formidable mass of conflicting testimony, and has extracted from it a more or less coherent account of the main facts of the King's illness and death. With great judgement he has refrained from all discussion of that vexed question, the deathbed conversion, and has contented himself with a bare recital of facts and a description of the royal patient's symptoms and treatment. All the different accounts agree on one point, and that is that Charles's last illness was very sudden. In spite of his constant excesses he had always been a strong and active man, and, though only just recovered from a recent attack of gout, he appeared to his courtiers to be in unusually good health and spirits on the last Sunday of his life, that Sunday which Evelyn has immortalized in his diary. The following morning Charles arose dazed and ill, unable to speak connectedly, and just as he was about to be shaved he uttered a cry and fell back in violent convulsions. Lord Ailesbury and Dr. (afterwards Sir) Edmund King, the physician, who were present, held a hurried consultation, which resulted in King, who had previously been a surgeon, opening a vein in Charles's right arm and removing 16 oz. of blood. This gave immediate relief, and the King was left sitting in his chair; cupping glasses were applied to the King's shoulders and deep scarification carried out, resulting in the removal of 8 oz. of blood; a strong antimonial emetic was given, followed by a dose of sulphate of zinc, and a succession of clysters and purgatives, whilst the King's head was shaved and blistered. Even the red-hot cautery was used. In two hours, during which the convulsions continued with such violence that the doctors believed death to be imminent, the King recovered consciousness. The royal patient was then put to bed; and he was declared to be out of immediate danger. On the evening of the same day the physicians again held a consultation, the result of which was that besides additional aperients the King was dosed with remedies to cause sneezing in order to relieved the pressure of "the humours" on his brain, and a concoction of cowslips and spirit of sal ammoniac was given to stimulate the brain. Noxious plasters were placed on the soles of his feet, whilst soothing draughts, light broth, and ale made without hops were administered throughout the night. It is unnecessary to follow the doctors step by step in their fruitless endeavours to combat the rapid progress of the disease. The recital of the first day's prescriptions, whilst incidentally throwing an interesting light on the therapeutic knowledge of the period, suffices to give us a fair idea of the treatment to which the unfortunate monarch was subjected, treatment which almost justifies Macaulay's assertion that Charles's medical attendants "tortured him during some hours like an Indian at a stake." On Wednesday night, whilst watching at the bedside of the King, the physicians who hitherto had been unable to form any definite opinion as to the nature of the disease with which they had to deal, decided that it was an intermittent fever, and decided "to give the cortex" (Peruvian bark). But this, like their other remedies, failed, and it became evident that Charles was sinking. Throughout the following day and night the dying man became rapidly weaker, though the doctors plied him with the most powerful stimulants they possessed—the famous Raleigh's antidote, powdered Goa stone, sal ammoniac, Peruvian bark, spirit of human skull, and, as a last resource, the Oriental bezoar stone, a remedy taken from the stomach of a goat, and held in great repute by seventeenth-century doctors. But Charles was beyond the aid of physic. He lingered till the morning of Friday, February 6th, 1684, when he sank into a stupor in which he passed quietly away.

The autopsy took place next day; and the observations of the doctors who were present are considered by Dr. Crawfurd a sufficiently convincing proof of the truth of his diagnosis. He says:

> The physicians were struck by the oedematous state of the brain, and the large amount of serous fluid in the ventricles, conditions associated later by Traube and others with uraemic convulsions. . . . No special mention is made of the kidney, but that, like the other abdominal organs, it was full of blood. . . . It is hard to see how medical knowledge, as it was at this period, could afford a fuller description than this of "gouty kidney with uraemia."

Perhaps the most interesting feature of the book is the narrative of Sir Charles Scarburgh, the King's chief physician, which is printed, both in the original Latin and in English, at the end of the volume. It is only a series of notes of the case, but it is valuable inasmuch as it gives in full the prescriptions for each day, together with a list of the doctors who signed each one.

The book is well printed and beautifully illustrated with several large plates; and Dr. Crawfurd is to be congratulated upon the plan followed throughout his narrative of giving in the margin beside each incident the name of the writer or writers from whom he has taken it. *The Last Days of Charles II* cannot fail to be of interest to the ever-increasing number of readers who love the by-paths of history. These sidelights on the past help us to picture to ourselves how those who went before us lived and died. It is to be hoped that others may follow the example set so ably by Dr. Crawfurd in helping to dispel the gloom which still enshrouds the medicine of history. In this lies the key to many a problem that puzzles the Dryasdusts who seek for the causes of political intrigues and events affecting the destinies of nations in the records of the council chamber when they may be found in those of the sick room.

[1] *The Last Days of Charles II.* By Raymond Crawfurd, M.A., M.D.Oxon., F.R.C.P. Published by the Clarendon Press, Oxford. 1909. (Pp. 80.)

DIRECT TRANSFUSION.

THE surgical methods introduced by Carrel for dealing with the union of blood vessels has opened up a wide field of possibilities. Some account of the wonders that have been worked are given in an article on the vascular system by Mr. Leonard Hill in *Further Advances of Physiology*. The successful transplantation of a limb from one dog to another; the grafting of a black Leghorn's ovary on to a white Leghorn which was mated to a white cock, resulting in spotted chickens; the exchange of kidneys from one cat to another, an exchange which resulted in the cat living a month, and for the first three weeks in apparent health—such are some of the results already achieved.

Dr. G. W. CRILE has now published in a volume entitled *Haemorrhage and Transfusion*[2] a very interesting account of his experimental and clinical researches on direct transfusion from the donor's radial artery to the recipient's vein. To effect the junction of artery and vein

[2] *Haemorrhage and Transfusion. An Experimental and Clinical Research.* By G. W. Crile, A.M., M.D. New York and London: Appleton and Co. 1909. (Roy. 8vo pp. 574; illustrations 66. 21s.)

he uses a special little cannula. The cannula consists of a straight tube with a handle which can be grasped by forceps. Various cannulae with diameter from 1.5 mm. to 3 mm. are provided. The end of the divided vein is pulled by a thread or pushed with fine forceps through the cannula, and its end is then cuffed back over the cannula by gentle traction on three "mosquito haemostat" forceps which are applied to the end of the vein. The vein is tied on to the cannula, the cuffed part is greased with sterile vaseline, and the end of the divided artery is then drawn over the cuffed part of the vein and tied on to the cannula. Thus intima is brought in contact with intima and clotting does not take place. Gentle traction is made on the vein during the transfusion to keep the way open through the cannula. Donors are found, as a rule, without difficulty. "When the gravity of the patient's condition and the reason for wishing to transfuse have been explained the entire family and numerous friends have frequently been eager to offer themselves."

Only one refusal among ignorant people has been met with. "In this case the parents of the patient, a nine-year-old child whose legs had been crushed, refused to assist, their argument being that the child was so much mutilated by the injury that it was not worth saving." In two instances donors were hired. "The commercial attitude was apparent, and they were not as tractable as those who responded to the appeal of sentiment." After the donor has been selected he is subjected to a thorough cross-questioning as to his family and personal history, and a thorough physical examination, so as to eliminate unsuitable donors. The best way of determining when to stop the flow in the interests of the donor is by watching his symptoms—slight quickening of respiration and pulse, pallor of mucous membranes, lowering of blood pressure, are signs to stop. Haemoglobin determinations may also be made. The blood lost by the donor is regained in four or five days, and he suffers very little inconvenience after the operation.

Dr. Crile, before turning to the practice of clinical transfusion, carried out many experiments on animals, and found that such might be resuscitated from any degree of haemorrhage by direct transfusion, and when the heart and respiration had stopped, and all other methods such as saline transfusion had failed. Similarly, animals poisoned by coal gas (carbon monoxide) were resuscitated by direct transfusion when all other methods, such as artificial ventilation with oxygen, failed. On the other hand, animals poisoned with strychnine or diphtheria toxin were not relieved by this method, because the poison had become anchored to the tissue cells. In surgical shock direct transfusion had just the same effect as after haemorrhage. This must be so if shock, as we think, is due to loss of vascular muscular tone, resulting in hypostatic congestion and circulatory failure. Animals transfused before an operation, so that they had more than their proper quantity of blood, could not be brought into the state of shock by trauma. Direct transfusion seems to be undoubtedly the best preparation for a patient in a profound state of shock after an accident who has to face an operation.

In cases of haemorrhage in typhoid fever "the patients were transformed from a dying state to a state sufficiently good to bear a laparotomy," and Dr. Crile says the attempt to secure the bleeding vessels should be seriously considered.

The most startling of Dr. Crile's results is the following:

> In 10 cases of transplantable lympho-sarcomata in dogs, bleeding and transfusion from donors immune to lympho-sarcoma was followed by complete regression of the tumours in seven cases; in two of the remaining ones there was a very marked effect from the transfusion, while one dog died without showing any tumour regression.

The immunity was determined by grafting pieces of tumour, and donors were chosen who failed to take the grafts. This cannot be done on man. But the results suggested that direct transfusion of blood of one or more donors might be tried in hopeless cases of sarcoma. So far, however, "transfusion in inoperable cases has cured none."

Transfusion, says Dr. Crile, has proved of no value in pernicious anaemia, leukaemia, hyperthyroidism. Cases of chronic suppuration and haemorrhage, on the other hand, were relieved, and often markedly, and the strength of the former might be thereby built up before operation.

The least satisfactory part of Dr. Crile's book is that in which he deals with such a subject as haemolysis. His summary of present knowledge on this subject is fragmentary and unconvincing.

MEDICAL DIAGNOSIS.

Dr. Otto Schumm's monograph on clinical spectroscopy[3] is a new example of the extension of exact laboratory methods to clinical medicine. The common practice of putting a suspected fluid into a test tube and merely glancing at it through a pocket spectroscope, has at Hamburg been replaced by systematic examination with a large Bunsen spectroscope, followed by accurate measurements of the absorption bands in wave lengths. Dr. Schumm gives us a complete description of his method and instruments, with examples of the spectra obtained, but he does not give any illustrations of the utility of these methods for ordinary clinical diagnosis, and therefore does not convince us that his elaborate technique demands a place in the clinical work of the present day. After a short account of the theory of spectroscopy there is a full description of eight varieties of spectroscopes. Two of them are from the author's own designs. There is an ingenious device for comparing two spectra by means of a Hufner's glass and a right-angled prism situated in front of the slit. By this means he can get with very little trouble equally illuminated spectra. Careful instructions are given as to the use of the instruments, and especially the accurate localization of absorption bands. A method of photographic reproduction is described which has been evolved by Herr Gummelt, a well-known German medical artist, and his illustrations show how photographs can produce "artefacts" in the way of non-existent absorption bands. The second part of the book deals with the spectra of various substances of more or less clinical interest. The haemoglobin derivatives come in for a great deal of attention. For the detection of carboxy-haemoglobin the author relies on the reduction test with ammonium sulphide (not Stokes's fluid), as by this means with his spectroscope he can detect 10 per cent. of carboxy-haemoglobin, whilst the other tests, including Tollen's test with formalin, are not nearly so sensitive. Whilst experimenting with coal gas from the city gas supply he noticed that he obtained under certain conditions the bands of cyan-haemoglobin, and a chemical examination of the gas showed that it contained 0.36 gram of hydrocyanic acid per cubic metre—rather a disturbing fact when it is remembered that 0.06 gram of this acid is fatal to man. For the recognition of blood in urine and faeces it is recommended to convert it into haemochromogen, and it is claimed that by doing so the spectroscopic test is rendered as sensitive as the unreliable guaiacum tests. Numerous tests for bile salts, bile acids, urinary pigments, cholesterin and oxycholesterin, oleic acid, etc., are described. For glycuronic acid in the urine the naphtho-resorcin test of Tollen is recommended, no mention being made of the old phloroglucin test. For the detection of pentose the author relies on the orcin test, and gives illustrations of the spectra obtained on adding arabinose to urine, whilst he does not mention the controversy which has been waged about the applicability of this pentose reaction to urine testing. We were sorry not to see any reference to Seliwanoff's test for laevulose, which is so often present in the urine of severe diabetes. Information as to its reliability would have been welcome. There is an appendix of twelve plates (uncoloured) which contain charts of 110 spectra, all accompanied by data of dilution, lighting, spectroscope, etc., so that they will prove of great use for comparing spectra with a known standard.

Dr. Engel's book on medical diagnosis[4] is stated to be the outcome of the post-graduate courses which have been held by the author for several years past, and have

[3] *Klinische Spektroskopie.* By Otto Schumm. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 165, 12 plates, 39 figures in the text. M.6.)

[4] *Medizinische Diagnostik. Ein Leitfaden für Studierende und Aerzte.* Von Dr. C. S. Engel, Berlin. Leipzig: Georg Thieme. 1909. Sup. roy. 8vo, pp. 372. M.7.)

been devoted to the examination of the various secretions and excreta of the human body. It claims to be a guide to those methods only which are at once trustworthy and simple; stress is laid upon any fallacies that exist, the diagnostic value of each reaction being summed up in a few words. The first chapter contains a description of the microscope as an optical instrument, of the various methods of staining, the formulae for all the better-known staining solutions, a list of the necessary apparatus for bacteriology, the mode of preparation of culture media, and the rules for identifying bacteria. All this is very well done and is illustrated by drawings sufficient to make the text perfectly intelligible. Succeeding sections deal with the blood, the secretions of the conjunctiva, nose, ear, mouth and pharynx, and the sputum, the first and last being discussed at length. The chapter on the stomach gives all the information required, but the author omits to make it clear that the principal object of diagnosis is to determine, first, whether or not there is pyloric obstruction; and, secondly, whether the obstruction is simple or malignant. It is true that the latter question cannot, with our present means of diagnosis, always be answered accurately, but the methods by which information of more or less trustworthy kind is obtained are quite properly given. The chapter on faeces follows Schmidt's well-known methods, but includes also some account of intestinal parasites. The last important subject dealt with is the urine, and we note that the author holds the presence of oxalates in the urine to have no other significance than that the urine is of low acidity and its only importance to be the possibility of the formation of a stone; he disbelieves in the existence of oxaluria as the consequence of any metabolic derangement. He quotes several modifications of von Jaksch's test, which have for their object its more rapid performance. Under acetone he does not mention the nitro-prusside and ammonia test generally used in this country. On the whole, the book is what it professes to be—a good guide for students and practitioners. It is clearly written, and its information can be relied on.

ASTHMA AND ITS TREATMENT.

The causation and development of an attack of asthma have always attracted the attention of the speculative physician. In British textbooks the main facts of the case are stated, but theoretical comments are for the most part left in the hands of specialists and works devoted to the one subject. Dr. M. Saenger, of Magdeburg, has made his name known as a student of asthma in its many forms, and he has recently issued, in a monograph of eighty-two pages,[5] the outcome of his thoughts upon the subject. Previous papers by the same author have appeared in German medical periodicals, and are here collected into a single volume, in which his opinions on causation and treatment are set forth at length, reference being made to a large experience of clinical cases, many of which are quoted in abstract.

The first part of the monograph is devoted to an inquiry as to the origin and nature of asthma, in which the theory of bronchiolar constriction is accepted without positive determination of the cause of the narrowing, although the probability is recognized that it is due either to actual nervous spasm or to local hyperaemia from reflex causes. That it is not due to an inflammatory process is equally clearly laid down. The author points out that most of the accepted causes of asthmatic seizures, whether they be physical or mental, are apt to produce acceleration of respiration, and that, in predisposed cases, such acceleration may culminate in a definite attack. Narrowing of the bronchioles by reflex action of this kind, when once it has occurred, is prone to occur again, and so to lead to irregular recrudescence of the trouble. But the psychical element has also to be reckoned with, and the author recognizes that there may be a morbid direction of the attention of the patient to the association of symptoms, and lead him to the constant fear that the symptoms which ushered in a previous attack are sure to lead to another. This fear is not controlled by the will, and a part of the method of treatment which Dr. Saenger advocates has for its object to overcome this want of will, and to enable the patient to realize that his will power is not lost, and that he can to some extent control the onset of the malady by the exercise of it.

In the latter part of the work, wherein he deals with treatment, the author enters at considerable length into the various morbid conditions which have been known or believed to induce asthma, and discusses the best methods of counteracting their influence; but it is upon the psychic aspect of the disease that he chiefly dwells, insisting upon the careful treatment in every case, and especially in its earlier stages, of the neurotic element. His system is for the most part directed to the regulation of the inspiratory movements, the patient's attention being centred upon a system of counting between each act of breathing. It may be open to question whether so much labour as has evidently been expended upon the preparation of this monograph is altogether compensated by the results achieved. It cannot be said to bring much practical assistance, but for those who love to speculate upon the problems of spasmodic affections, and are sufficiently well versed in German to unravel some truly colossal sentences, we can commend the study of Dr. Saenger's essay.

[5] *Ueber Asthma und Seine Behandlung.* By Dr. M. Saenger, of Magdeburg. Berlin: S. Karger. 1910. (Sup. roy. 8vo, pp. 82. M. 1.50.)

NOTES ON BOOKS.

So large a number of textbooks of chemistry exist already that the appearance of yet another may fairly be thought to require some justification. In their *Inorganic Chemistry, Part I*,[6] Messrs. Kipping and Perkin explain that they have not found the arrangement of the subject-matter in other books well adapted for use with the ordinary course of lectures in a college, and they have endeavoured to remedy these disadvantages by a different arrangement. This volume is intended to be the student's textbook during the first year of a three years' course, and is to be followed by a Part II. As might be expected from such experienced teachers as the authors, the information given is clearly presented, and the arrangement good; while the statements made are in proper accordance with recent discoveries and modern theories.

Dr. Kellas's *Introduction to Practical Chemistry*[7] is intended especially to meet the wants of students preparing for the examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons, and is the outcome of the author's experience in teaching medical students. It possesses throughout the character of a textbook intended for preparing for an examination rather than for imparting a thorough knowledge of the subject. Thus, in the first chapter the formulae for a large number of substances are given, with instructions for writing formulae and equations by aid of a table of valencies, which is given before anything has been said about the substances themselves. In dealing with the volumes of gases, the first statements about pressure are that volume varies inversely as pressure, and "the standard pressure is 760 mm.," but there is no mention of mercury in connexion with the 760 mm., or explanation of how pressure can be expressed by linear measure, and similar instances might be multiplied. The particulars of tests to be used in the analysis of salts are necessarily much the same as in other textbooks of the subject; short sections are devoted to quantitative analysis by gravimetric and volumetric methods.

Arny's *Principles of Pharmacy*[8] is primarily an explanatory commentary on the *United States Pharmacopoeia*, intended for the use of students. Four of the seven parts into which it is divided are so closely related to the text of the *Pharmacopoeia*, dealing respectively with its galenicals, inorganic and organic chemicals, and tests, that they are not very likely to be studied in detail by those whose concern is with the *British* and not the *American Pharmacopoeia*. The other sections, dealing with pharmaceutical processes, dispensing, and a course of laboratory work for students of pharmacy, are equally useful in any English-speaking country. The thoroughness with which the ground is covered is deserving of much praise. Such simple problems as how to prepare opium containing 12 per cent. of morphine from two batches containing

[6] *Inorganic Chemistry.* Part I. By F. Stanley Kipping, Ph.D., D.Sc., F.R.S., and W. H. Perkin, Ph.D., M.Sc., F.R.S. London and Edinburgh: W. and R. Chambers, Ltd. 1909. (Crown 8vo, pp. 320; 79 illustrations. 3s. 6d.)

[7] *Introduction to Practical Chemistry for Medical, Dental, and General Students.* Oxford Medical Publications. By A. M. Kellas, B.Sc., Ph.D. London: H. Frowde, and Hodder and Stoughton. 1909. (Med. 8vo, pp. 270; 20 illustrations. 3s. 6d.)

[8] *Principles of Pharmacy.* By Henry V. Arny. P .G., Ph.D. Philadelphia and London: W. B. Saunders Company. 1909. (Roy. 8vo, pp. 1175; 246 illustrations. 21s.)

respectively 10 and 18 per cent. are made thoroughly clear, and the student is led on to more complex matters like the processes of drug assay and the chemistry of the terpenes. Occasional lapses are to be noted, such as the classing of milk and ox gall as animal excretions, and the rather contradictory statements about the valency of aluminium and its compounds, but errors of any kind appear to be rare. The book will prove very useful to students of pharmacy.

The twenty-first volume of the reissue of the *Dictionary of National Biography*[9] has been published this month. It corresponds to the sixty-first, sixty-second, and sixty-third volumes of the original edition, and takes the alphabet to the end of Z; but three supplementary volumes to the original edition were published in 1901, and these will form the twenty-second volume of the reissue. Among the biographies in the twenty-first volume are those of Willis, who described the circle of cerebral arteries; of Sir Christopher Wren, the great architect, who made many of the drawings by which Willis's book was illustrated; and of Young, physician, physicist, and Egyptologist.

A second edition of Dr. Leroy's book on massage of the face has been called for. The first edition, published less than a year ago, was reviewed in the British Medical Journal, 1909, vol. i, p. 1486. The new edition[10] has been revised and corrected, and is probably the best book on a promising method of treating such obstinate affections as acne vulgaris and rosacea.

How to Become a Nurse, edited by Sir Henry Burdett,[11] is a useful book, not only for those who are desirous of becoming nurses, but as a book of reference for medical men and others to whom nurses look for guidance at the commencement of their career. Numbers of young women lose many valuable years of their lives, as far as their professional advancement is concerned, by accepting a training in cottage hospitals, nursing homes, or small union infirmaries, which are not recognized training schools. These institutions profess to train nurses, and give a certificate, and it is not until the nurse has left, and is applying for other posts, that she finds that her certificate will not enable her to obtain any good appointments. One of the most useful features in this new edition is a chapter classifying the hospitals and infirmaries in three divisions: (1) Institutions of 100 beds and over, giving a full and complete nursing training; (2) institutions of less than 100 beds, giving a partial training; (3) institutions for employment of nurses only. This classification would be improved if some of the larger county hospitals with less than 100 beds were added to No. 1. Some of these hospitals give an excellent training, and have a larger teaching staff of doctors and trained nurses, and a far greater variety of cases, and better surgical work than many of the union infirmaries of 100 beds and over which are included in the list. The introductory chapter on how to prepare at home for becoming a nurse is most excellent, and full of good advice. If a girl who is too young to commence her training learns the elements of physiology and hygiene, and goes through a course of "Home Science," such as that given at King's College, London, and tests her knowledge by entering for the examinations, she will find it will be a great assistance to her when she enters the hospital. There are good chapters on male nursing, the working of the Midwives Act, and on the principal laws affecting nurses.

Messrs. Shaw and Sons inform us that they merely printed *Sugden's Doctors' Account Book*, noticed last week, p. 1475, to Mr. Sugden's order. They do not publish the book.

[9] *Dictionary of National Biography*. Edited by S. Lee. Vol. xxi. Whichcord-Zuylestein. London: Smith, Elder, and Co. 1909. (Roy. 8vo, pp. 1364. 15s.)

[10] *Le massage plastique dans les dermatoses de la face, ses indications—ses résultats*. Par le Dr. Raoul Leroy. Deuxième édition. Préface de M. le Dr. L. Jacquet. Paris: Ch. Boulangé. 1909. (Fcap. 4to, pp. 213. Fr.4.)

[11] *How to Become a Nurse*. Edited by Sir Henry Burdett, K.C.B., K.C.V.O. New edition. London: The Scientific Press, Ltd. (Cr. 8vo, pp. 466. 2s.)

MEDICINAL AND DIETETIC PREPARATIONS.

Lysol.

The water-soluble preparation of cresols called Lysol is widely known and in general use as a disinfectant and antiseptic. Messrs. C. Zimmermann and Co. (9 and 10, St. Mary-at-Hill, London, E.C.) have forwarded for our examination a bottle of this liquid showing the new style in which it is being packed. This is a flat bottle with lateral angles, of dark amber glass and fluted, and therefore at once distinguishable by sight or touch from bottles containing liquids for internal use. It is closed by a china stopper, with india-rubber washer, held firmly in place by an ingenious wire spring, so that it does not leak when inverted, but is more easily opened than a corked bottle.

BRITISH MEDICAL BENEVOLENT FUND.

At the November meeting of the committee, twenty-seven cases were considered, and grants amounting to £271 made to twenty-three of the applicants, three cases being passed over as unsuitable for help, and one postponed for further inquiry. Appended is an abstract of the cases relieved:

1. L.S.A., aged 65. Used to have a fair practice but lost it through ill-health and other misfortunes, and has had to start afresh in a neighbourhood where the fees are extremely small and the competition very severe. Is making progress but requires a little help. Relieved once, £18. Voted £18 in twelve instalments.

2. Widow, aged 64, of M.R.C.S., L.S.A. Since husband's death, twenty-four years ago, has supported herself until recently, but now finds it very difficult to obtain work, and is not in very good health. Relieved once, £12. Voted £12 in twelve instalments.

3. Wife, aged 64, of M.R.C.S., was deserted by her husband six years ago through no fault of her own, and is now destitute and in very feeble health. No friends or children able to help. Relieved twice, £24. Voted £12 in twelve instalments.

4. L.R.C.P., L.R.C.S.I., aged 62. Practised for many years in the north of London but lost all his patients through gradual failure of health, and is now quite incapacitated. No children, no income, and help given by friends during the last year is obliged to be withdrawn. Voted £18 in twelve instalments.

5. Daughter, aged 48, of late M.R.C.S., L.S.A. Was obliged to give up a good post as governess to nurse her mother during an illness which continued many years, and now needs a rest before again endeavouring to find employment. Income only a few shillings a week. Voted £5 in one sum.

6. Daughters, aged 59 and 50, of late M.R.C.S. Since father's sudden death more than thirty years ago have endeavoured to support themselves by receiving paying guests at a small house of which they are the owners. Are obliged to ask help for the winter owing to the expenses arising from a severe accident to the elder applicant. Voted £10 in one sum.

7. Widow, aged 63, of M.R.C.S., L.S.A. Maintained herself as a nurse-companion for many years, but is now practically destitute. Receives a few shillings occasionally from a son, recently made a bankrupt, and earns about a shilling a week by glove cleaning. Voted £12, in twelve instalments.

8. Widow, aged 68, of M.R.C.S. who practised in London, but was incapacitated owing to ill health, and supported for several years by the applicant. No income and dependent on a son-in-law, who can ill afford to help. Voted £10 in two instalments.

9. Widow, aged 68, of L.R.C.P.Edin., M.R.C.S.Eng. No income; children unable to help; health failing. Relieved twice, £24. Voted £12 in twelve instalments.

10. Daughter, aged 58, of late M.D.Lond. No income; endeavours to support herself by letting lodgings and by needlework; eyesight defective. Relieved twenty-six times, £196. Voted £6 in six instalments.

11. Widow, aged 72, of M.D.Lond. Only income two small annuities, and asks for a little help to obtain little comforts necessitated by her advanced age. Relieved four times, £26. Voted £5 in one sum.

12. Daughter, aged 55, of late M.D., L.S.A. Was a governess for many years, but is now in ill-health and quite unfitted to earn her living. Relieved eight times, £80. Voted £12 in twelve instalments.

13. Daughter, aged 53, of late M.D.Edin. No income; endeavours to support herself by taking lodgers, but has had a very bad season. Relieved twice, £12. Voted £10 in one sum.

14. Widow, aged 55, of M.B.Cantab. Quite unprovided for at husband's sudden death about seven years ago, and has since endeavoured to support herself by taking in washing and acting as charwoman. Has two daughters in domestic service, and is advised by one of them in Australia to go out there with the youngest child, aged 9. Relieved six times, £77. Voted £5 temporarily, and promised £12 towards passage money if friends find the balance.

15. Widow, aged 49, of L.S.A. Left quite destitute at husband's death from new growth a few years ago, and dependent on a son, aged 17, earning 15s. a week. Health feeble; very deaf; has lost her sight in one eye, and is nearly blind in the other. Relieved four times, £50. Voted £12, in twelve instalments.

16. Widow, aged 53, of L.F.P.S.Glasg. No income, slight help from elder children, but has three dependent on her, the youngest having spinal curvature. Relieved three times, £36. Voted £12, in twelve instalments.

17. Widow, aged 50, of L.S.A. Two daughters, aged 17 and 15. Has endeavoured to support herself and them by letting lodgings, but has been obliged to sell most of her furniture. Relieved twice, £20. Voted £12.

18. Daughters, aged 57 and 52, of late M.R.C.S. Small earnings from needlework and slight help from friends. Relieved five times, £56. Voted £18.

19. Widow, aged 75, of M.R.C.S. Has an Epsom College pension, and receives a little help from a son, but has been obliged to incur heavy expenses for a daughter who has recently undergone a severe operation. Relieved seven times, £68. Voted £10.

20. Daughter, aged 62, of late M.R.C.S. Assisted her mother to keep a boarding-house for thirteen years in order to support her father who was paralysed, and now acts as housekeeper to two sisters who are endeavouring to establish a school. Relieved once, £12. Voted £12.

21. Daughter, aged 51, of late M.R.C.S. Nursed her father, who was a pensioner of this Fund and Epsom College, for ten years, and now finds it very difficult to obtain sufficient work to support herself. Relieved once, £12. Voted £12.

22. L.R.C.P., L.R.C.S.Edin., aged 52. No income; has been incapacitated by spastic paralysis for several years. Relieved five times, £60. Voted £12.

23. Daughter, aged 49, of late M.R.C.S.Eng., L.R.C.P.Edin. No income, and has recently undergone a severe abdominal operation. Relieved once, £12. Voted £12.

Contributions may be sent to the Treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

THE ROYAL COMMISSION ON THE POOR LAWS AND RELIEF OF DISTRESS.

REPORT ON SCOTLAND.

MEDICAL RELIEF AND ABUSE OF MEDICAL CHARITIES.

THE attention of the Commissioners was drawn to the abuse of outdoor medical charities in the large towns by persons well able to pay for treatment, and in dealing with the matter they express the opinion that it is somewhat remarkable that, notwithstanding the proverbial thriftiness and independence of the Scottish nation, there should not exist in any of the large towns in Scotland a single provident dispensary or a public medical service on a provident basis, such as are found in many towns in England. Of the numerous advantages which the organizations are considered by the majority of the Commissioners to possess special attention is directed to the following: That they provide a method of insurance for medical aid; that by means of a small weekly or other periodical payment members are enabled to obtain such aid for themselves and their families at a cheaper rate than if they went as ordinary patients to a private practitioner; that, as there are frequently a number of doctors attached to the staff of the dispensary or medical club, members have power to choose their own medical adviser as they would in ordinary life. The majority of the Commissioners, however, consider that one of the chief advantages of these organizations is their effect on character, since they enable the working classes to preserve a spirit of independence, instead of resorting to the Poor Law or charity in times of sickness. It is, they think, regrettable that so many persons in the large centres of population in Scotland appear to be willing to accept charitable medical relief instead of adopting some form of providence or thrift in order to provide themselves with medical attendance.

This to a certain extent is true, but medical practitioners in Scotland have never encouraged the formation of provident dispensaries or medical clubs, more especially those admitting wives and children. Clubs in connexion with industrial works do exist, but only for the employees, not their families; in many cases the annual capitation rate is so absurdly small that it is not, as a rule, worth while for medical men to have anything to do with them. This applies more especially to clubs in small towns averaging 50 or 60 members, whose demands on the services of the medical officer are most exacting. The case of the Fife collieries shows that the fee charged is 6d. per head a fortnight; this arrangement existed for some years until a few months ago, when a medical man came into the district and gave medicine—which was not included before—in addition for 6d. a fortnight. It will thus be seen that club work is neither profitable nor in many districts pleasant.

The Commissioners express surprise that abuse should exist in connexion with general hospitals, and express the hope that, as attention has now been drawn to the matter, "an endeavour will be made to vindicate the national character."

Parish councils frequently make use of their power of subscribing to voluntary hospitals. Sick poor are also sent to such hospitals and paid for by the councils concerned. It is stated in the report that this class of patient is decreasing; for example, while 400 cases were sent in 1866 to the Edinburgh Royal Infirmary by Poor Law infirmaries, in 1906 only 12 cases were sent, all of them by country parishes. The reason of this may be that better provision is now made for the treatment of sickness in poorhouses, and also that poor persons find their way to the infirmary without the intervention of the Poor Law authorities.

As regards the provision of hospital accommodation for the community, the Scottish sanitary authorities, unlike the English, have no power to provide hospitals other than for the treatment of infectious diseases. The Commissioners find, however, that much the same problem as that which prevails in many towns in England is growing up in the large towns in Scotland. On the one hand are the voluntary hospitals struggling to cope with the demands made upon them, and unable to accommodate every one seeking treatment within their walls; while, on the other hand, are the Poor Law authorities gradually providing hospitals which are primarily for pauper cases, but which also receive others whose "destitution" mainly consists in the fact that they are in need of hospital treatment which they cannot obtain elsewhere.

Regarding the terms of admission to the voluntary hospitals, the Commissioners note that they vary in different towns. Thus, at the Edinburgh Royal Infirmary "all treatment and advice is granted free," but in Glasgow, Dundee, and Aberdeen admission is gained chiefly by means of a subscriber's line, exception being made in cases of accident and urgency. No general hospital or infirmary, as far as the Commissioners have been able to ascertain, has made any systematic attempt, either by the appointment of an almoner or otherwise, to institute inquiries into the circumstances of persons applying for treatment. Consequently the benefits of the infirmaries are not infrequently taken advantage of by persons well able to pay for treatment. Many instances of hospital abuse were brought to the notice of the Commissioners. Independently of whether a patient has previously contributed to the funds of a hospital, or obtains admission on a subscriber's line, the treatment once he is admitted into a general infirmary is "absolutely free." Compared with this, the patient in the Poor Law hospital is at a great disadvantage. Not only is he subjected to the stigma of pauperism and liable to disfranchisement, but he or his relatives may be called on to refund the cost of treatment in whole or in part.

The abuse of hospital charities by the well-to-do, the inability of persons in moderate circumstances to obtain specialist treatment otherwise than by entering a voluntary hospital or infirmary, and possibly the desire of the hospital authorities to procure cases that are interesting from a clinical point of view, are given as the reasons why numbers of poor patients, as well as patients suffering from chronic illness, are excluded. For such patients there is practically no provision apart from the Poor Law hospital, to which they go either in the first instance or after being refused by the voluntary hospital.

The Commissioners report that there is no effective or intelligent co-operation between the voluntary and the Poor Law hospitals, and that no clear line, economic or medical, can be drawn between the cases dealt with in the two classes of institution. As regards the destitute and the non-destitute alike, surgical and acute medical cases may be dealt with by both. The tendency is, however, for the voluntary hospitals to confine their attention mainly to cases of acute illness, and to send cases of chronic illness to the Poor Law. There appears to be a feeling that co-operation should be developed along these lines. Suggestions have also been made that there should be in the large towns a local representative body, with powers of supervision and, in some respects, control over the various organizations providing hospital accommodation.

Two things, therefore, are, the majority of the Commissioners consider, clear as regards the large towns. First, that the amount of hospital accommodation is generally

inadequate to the needs of the inhabitants; and, secondly, that, in the interests of economy and the patients themselves, any expansion of the hospital system must be accompanied by closer co-operation between the voluntary hospitals and the Poor Law. Such co-operation, however, can never be satisfactorily accomplished until patients in both sets of institutions are treated on the same terms. Either the Poor Law treatment must be gratuitous, and without stigma, or there must be legal recovery from patients in both sets of institutions upon the same principle.

The Commissioners state that the evidence brought before them shows that the time has come when steps should be taken by the authorities of the voluntary hospitals to check the abuse of their benefits by the well-to-do, and that witnesses had suggested that patients should be called on to pay for treatment according to their means.

Were these suggestions carried out, voluntary hospitals would, the Commissioners consider, have greatly to increase their accommodation, and the general practitioner would be deprived of many patients who at present are able to pay him reasonable fees for medical attendance at their homes. While the large towns in Scotland are well supplied with voluntary hospitals—which are, however, taxed to their utmost to provide accommodation for deserving patients—outside these towns there are only a few county infirmaries supported by voluntary contributions, and there is reason to believe that, in the case of many of these, patients are admitted who are well able to pay for medical treatment outside, and hospital abuse is gradually extending to them also. There are also a number of cottage hospitals, many of them built and endowed by private donors. Although the number of such hospitals appears, say the Commissioners, to be gradually increasing, there is great need for a better provision of hospitals in rural districts, and this is the more urgent because of the inadequate provision made for the sick poor in rural poorhouses.

Reference was made in last week's Journal to the lack of accommodation in certain parts of the Highlands and Islands of Scotland—notably in the island of Lewis. The want of such accommodation is alleged to result in great suffering, and to be seriously affecting the general health of the population. The late Dr. MacDonald, medical officer for the Parish of Stornoway, in his evidence before the Commission, stated:

> To begin with the parish of Stornoway, which has a population of 13,000, and which embraces the *quoad sacra* parishes of Knock and Back, there are, in the near vicinity of the town of Stornoway, a cottage hospital of twelve beds, and an infectious diseases hospital with a similar number of beds. These two modest institutions are supposed to supply all the medical requirements of the whole population of Lewis—over 31,000—amongst the rural population of whom, owing to the utter want of any efficient method of isolation and the insanitary condition of the houses, fever has become endemic.

Recommendations.

As regards the question of medical aid to the poorer classes generally, the majority of the Commissioners recommend:

1. That a better supply of hospital accommodation should be provided, based on the needs of each public assistance area.

2. That a united effort should be made to prevent the abuse of medical charities by persons in a position to pay for treatment.

Means to give Effect to the Recommendations.

In the opinion of the majority of the Commissioners, the first essential of reform is that steps be taken to prevent overlapping of effort, not only in regard to new hospitals, rate-provided or voluntary, but also in regard to those that at present exist. They recommend therefore:

That there should be systematic co-operation between the public assistance authorities, the sanitary authorities, the education authorities, and the voluntary medical institutions, based on a clear definition of their respective functions.

To that end it is necessary, they think, that there should be appointed a joint committee consisting of representatives of these authorities and of the medical profession. This committee should be entrusted with the duty of framing schemes of co-operation to be adopted by the various bodies concerned. The committee might also consider, after consultation with the voluntary aid councils,* where such exists, the needs of each public assistance area in regard to hospital accommodation, with a view to additional accommodation being provided where necessary. This must be a gradual process, and the Commissioners do not suggest that the rates should bear the entire cost. It is a popular form of charity, and to publish the needs of a district would be a guide to charitable donors. There is, too, as has been shown, evidence in favour of small self-supporting hospitals or nursing homes.

In order to prevent abuse of the medical charities by the well-to-do, and to preserve a spirit of independence among the working classes, the Commissioners recommend that a strong endeavour should be made to restrict the benefit of gratuitous medical aid to the really necessitous classes. For England, the provident dispensaries, being widely known, and in certain districts attended with much success, the Commissioners recommended the establishment of a universal system of provident dispensaries in order to assist and encourage existing voluntary institutions, and to make the lines of progress follow the lines of voluntary effort. Existing provident dispensaries were therefore made the basis for a reorganization of medical aid on a provident basis in England, but in Scotland the case is quite different. Though the general principle may be equally applicable to both countries, yet for practical purposes the provident dispensary system is unknown in Scotland. For these reasons the Commissioners do not recommend the immediate establishment of a universal system of provident dispensaries in Scotland, but think the time has come to offer the working classes further opportunities of securing medical aid for themselves and their families by means of some form of insurance, for example, by establishing provident dispensaries or medical clubs. Accordingly the Commissioners recommend that steps should be taken to see how far such dispensaries or clubs should be established. They suggest that as a beginning some of the free dispensaries might, as in England, be converted into provident dispensaries, and contributions from public assistance authorities might be offered as an inducement to them to do so.

In some parts of the highlands and islands, where the majority of the inhabitants are on the verge of pauperism, it is inevitable that a subsidy would have to be given which would represent a large proportion of the whole expenditure. In these districts the Commissioners think that at first the weekly contributions by members would be merely nominal, and that, as the condition of the inhabitants improved, the amount of the subsidy should be diminished gradually until the dispensaries became self-supporting. The establishment of provident dispensaries, if carried into effect, would concern the medical profession to a very large degree. The Commissioners state that of the inducements offered to poor people to join provident dispensaries, if the law enables them at any time to obtain from the public assistance bodies medical relief free from disabilities, the main are in their opinion these:

1. In the towns and populous districts, where, we assume, the establishment of provident dispensaries will be begun, the members of the provident dispensary would be able to choose their own doctor from the list of local medical practitioners attached to the dispensary. A member of a provident dispensary would thus be in the same position as a well-to-do citizen, in that he would be employing a doctor chosen by himself, instead of a doctor chosen by a public authority.

2. A dispensary doctor should be empowered to recommend a member of the dispensary for admission to public assistance authority hospitals, and, in certain cases where arrangements have been made, to voluntary or general hospitals or infirmaries.

3. For reasons which they have detailed in their English Report the Commissioners think that the public assistance authority or parish council must continue to have the right and duty of demanding repayment of the cost of medical relief in cases where the patient is able to pay. In

* This council, it is suggested, should consist in part of trustees of endowed charities, of members of registered voluntary charities, of some members of public assistance authority, and of such persons as ministers of religion, members of kirk sessions, members of friendly societies and trade associations, and of other persons being co-opted members, as may be settled in schemes to be approved by the Local Government Board.

the case, however, of a member of a provident dispensary, inasmuch as they propose that membership should be limited to persons below a certain wage limit, no inquiries as to means should be made. It would therefore follow that subscription to a voluntary dispensary would be held to include contributions by the patient towards the cost of his institutional treatment when necessary.

4. In addition to preserving the spirit of independence, the members of provident dispensaries would manage their own concerns, and it might well be hoped that there would grow up an *esprit de corps* analogous to that which prevails in a friendly society.

The Commissioners, while, however, strongly of opinion that a system of medical aid based on provident lines should gradually be established in Scotland, considered that they had not sufficient evidence to do more than make the above general suggestions. More especially do they consider that such a system could be established only with the hearty co-operation of the medical profession, whose interest at present suffer, and would be deeply affected by any such arrangement as that proposed. Accordingly, they recommend the appointment of a Departmental Committee to consider the best means for giving effect to the general proposals of which they have given the outline.

The remarks in the foregoing summary refer chiefly to the conclusions and recommendations of the Majority Report. The Minority state that they cannot but concur in the trenchant criticism and the emphatic condemnation contained in the Majority Report as regards the provision which, in the twentieth century, Scotland makes for its sick poor. They say that, according to Poor Law theory, and, indeed, according to the practice of the Scottish Poor Law, every person who is sick, and unable to obtain for himself the medical attendance, nursing, and medicine that his condition requires, is entitled to have such medical attendance, etc., provided for him at the expense of the poor rate, at least up to the customary standard of the time. It is, the Minority state, unfortunately only too plain that, up and down Scotland, the sick poor are in thousands of cases not so provided.

What the Minority recommend is that the Local Health Authority be empowered and required to search out all sick persons within the district who are destitute of medical attendance, all infants destitute of proper nurture, and all infirm persons needing medical attendance and nursing, and to apply the appropriate treatment, either in their homes or in suitable institutions.

SPINAL ANALGESIA.

On Thursday, November 18th, at the Seamen's Hospital Greenwich, Professor JONNESCO of Bucharest demonstrated before a large number of medical men his method of applying spinal analgesia to operative procedures on the head, neck, and upper abdomen, which was described fully by him in our issue of November 13th. Mr. Lawrie McGavin, Surgeon to the Seamen's Hospital Society (Dreadnought Hospital, Greenwich), has kindly supplied the following report of the cases, three in number, which were submitted to operation:

CASE I.

A man, aged 32, of strong physique, suffering from a mass of tuberculous glands in the submaxillary region. The injection, which consisted of stovaine cg. 3 and neutral strychnine sulphate mg. ½, was made between the second and third dorsal spines in the median line, the patient being in the sitting position and with the head fully flexed on the neck. At the end of two minutes he was placed gently on his back, and the head and shoulders were lowered. Analgesia was complete in about one minute to the level of the forehead, when the table was levelled and the operation commenced. The glands were removed without any pain whatever, but deep tactile sensation was retained. Both costal and diaphragmatic respiration were carried on perfectly normally. The conjunctival reflex was partially abolished and the tongue was insensitive, although the patient could speak fairly well. Hearing was not interfered with. The analgesia extended to the region of the umbilicus, and lasted about an hour. He walked without difficulty from the theatre to the ward. He stated the following day that he had "felt no pain whatever, and only knew that something was being done, by the movement of his head and the pulling at his neck." He said he "would not mind undergoing it again." With the exception of some headache there were no post-analgesic phenomena.

CASE II.

A man aged 62, suffering from carcinoma of the stomach; rather feeble and wasted, of Irish nationality, and very impressionable. The injection was done through the dorso-lumbar interspace, and consisted of stovaine 10 cg. and strychnine 1 mg. Patient remained in sitting position for one minute, and was then placed on his back in moderate Trendelenburg position. Analgesia was complete in five minutes to the level of the zygoma above and the middle of the thighs below. Respiration perfect, both costal and diaphragmatic. Slight retching for a space of three minutes on table. Conjunctival reflex abolished. Patient spoke easily, but tongue insensitive. The skin incision was quite unfelt, as was division of the epigastric aponeurosis, but as soon as an attempt was made to withdraw the omentum and stomach the patient groaned and said that although he was not being hurt he felt "as if his insides were being pulled out." As the cardiac end of the stomach was found to be converted into a mass of growth nothing could be done, and the abdomen was closed. The analgesia lasted about an hour and a quarter, and the patient was none the worse.

CASE III.

A boy of 14 years of age with chronic suppuration in the mastoid antrum. The injection was made as in the first case, the dose being stovaine cg. 2 and strychnine mg. ½. On the head and shoulders being lowered the analgesia rose almost immediateiy to the level of the eyes and extended to about the costal margin below. Respiration was perfect. Upon incising the periosteum some pain was complained of, and as this persisted at each attempt a second injection was given. This, however, failed to have the desired effect, and the operation was completed under general anaesthesia. The patient was none the worse for the injection, which did not in the least interfere with the anaesthetic.

Commenting on the subject, Mr. LAWRIE MCGAVIN observes that all three cases serve definitely to prove that it is possible, by the addition of a respiratory stimulant to the spinal analgesic, to push the analgesia far above the level of the respiratory centres without interfering with the respiratory act. It was especially this point that Professor Jonnesco wished to demonstrate. The first case, he says, proved quite conclusively that with such surgical analgesia it is possible to perform operations at levels hitherto believed to be beyond the range of spinal analgesia. The second and third cases prove very little beyond what has been already stated. Neither of these patients were good subjects for such a demonstration as it was proposed to attempt. One was highly excitable and neurotic, the other was little more than a child; both were obviously rather frightened at the large concourse of medical men present in the theatre. In Mr. McGavin's opinion, the second case proved at least that whatever the effect of the method might be as regards the abdominal viscera, the muscles, fasciae, and skin were so completely analgesic that such an operation as an interscapulo thoracic amputation might easily have been performed without any difficulty had such operation been necessary, and this, it must be admitted, has hitherto been an absolute impossibility.

Mr. McGavin proceeds: Space will not permit of a discussion of the reasons for the partial failure in the second, and the complete failure in the third case so far as the surgical aspect is concerned; but it must be perfectly obvious to all who are not hopelessly prejudiced against any scientific innovation, that if one successful case is not sufficient to recommend the method, neither are two partial failures sufficient to condemn it. Every surgeon of experience has seen repeated failures attending various methods of general anaesthesia, and yet general anaesthesia is not condemned by all on that account. It is perfectly obvious to all thinking members of our profession, that spinal analgesia has come to stay; that those in whose hands the nurture of this new infant should rest will better serve their own interests, as well as those of their fellow-men by adopting it gradually and studying how to advance its welfare rather than by rejecting at the outset what they may later be compelled to accept. It is further perfectly obvious that Professor Jonnesco's method, as all will admit who witnessed his lantern demonstration before the Royal Society of Medicine, is a very great advance on our present methods of spinal analgesia, and that it will, when it is better known, and possibly even improved, revolutionize the science of anaesthetics. If we are obstinately conservative in this country with regard to such matters, how can we be surprised that our patients look upon us as being hopelessly behind our European *confrères* and hasten to them for the help which they believe to be unobtainable at home?

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association

IN LONDON, JULY, 1910.

As has already been announced, the Association will next July hold its Annual Meeting in London. For some years past it has been the custom, at this season of the year, to put before readers of the British Medical Journal a short historical and topographical account of the city or town in which the Annual Meeting of the ensuing year is to be held, with a description of the principal industries and buildings, especially such of the latter as are to be employed for the accommodation of the various sections and assemblies connected with the meeting. At the moment of writing, however, negotiations are still in progress as to the buildings which will be most suitable for the purposes of the Association, so that we are unable now to deal with this portion of our subject. In respect of the rest, to attempt a description of the metropolis would be futile, having regard to the space at our disposal compared with the vastness of the theme, and unnecessary, because of the personal knowledge of London and its salient features which must certainly be possessed by the majority of our readers. Attention will therefore be confined to points of particular medical interest.

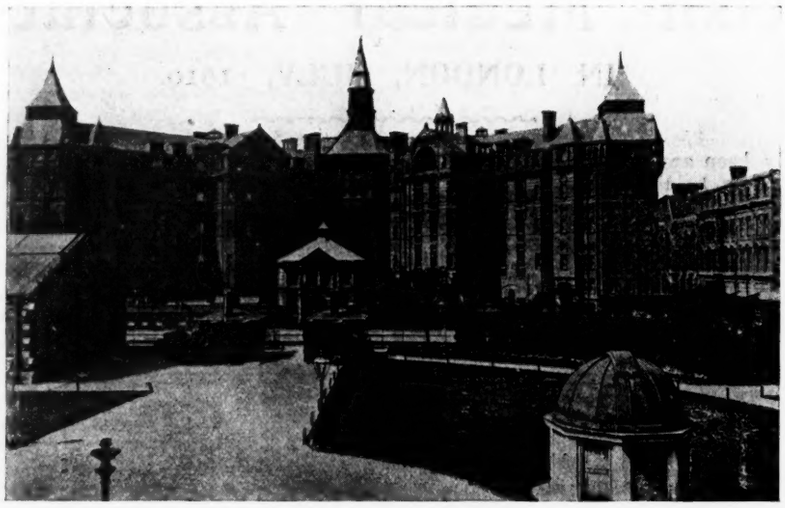
The House of the Association in the Strand.

Next year's Meeting will be the fourth to be held in London. The first took place in 1862, under the presidency of Dr. (afterwards Sir) George Burrows; the second in 1873, under that of Sir William Ferguson; and the third in 1895, when Sir J. Russell Reynolds was President. The mere mention of the names of these presidents, with those of the equally eminent men who delivered the principal addresses—Walshe, Paget, Sharpey, Parkes, Wood, Broadbent, and Hutchinson—suggests a long flight of years, even though happily Sir Jonathan Hutchinson is still with us. And if, further, we set our minds deliberately to review the history of our Association since 1895, or to picture in the imagination London as it was in that year, we may well think it difficult to believe that the short span of fourteen years separates us from the occasion of the third London meeting. It is not, however, the purpose of this article to deal with the history of the Association, important though it has been during even the present century; rather are we concerned with visible changes in London itself.

If perchance there is any member of the Association who will be paying a visit to London next year for the first time since 1895—the date of the last meeting held therein—we venture to say that, even though his acquaintance with the city and its environs was at that time as extensive and peculiar as was that of Mr. Samuel Weller in his day, he would, if he were suddenly dropped into some of its streets, be hard put to it to know where he was, so busily has the "frequent contractor" been at work.

At the eastern end of the Strand, not far from the head quarters of the Association, the formation of the thoroughfares of Aldwych and Kingsway, north of the churches of St. Clement Danes and St. Mary-le-Strand, has completely transformed the locality. Considerable changes are to be noticed along the Strand itself, amongst which the rebuilt house of the Association is not the least. The elevation of the new building is simple and dignified, and a year's experience of its working proves that the interior arrangements, which were the subject of much anxious debate between the Premises Committee and the architect, are very well adapted to their purpose, and conduce to the convenient dispatch of the Association's business. There is a beautifully proportioned library on the first floor, a commodious Council chamber possessing excellent acoustic properties on the second floor, a common room for members on the third floor, commanding on clear days a remarkably fine view across the Thames to the hills of Sydenham and Norwood, and numerous excellent committee rooms and offices.

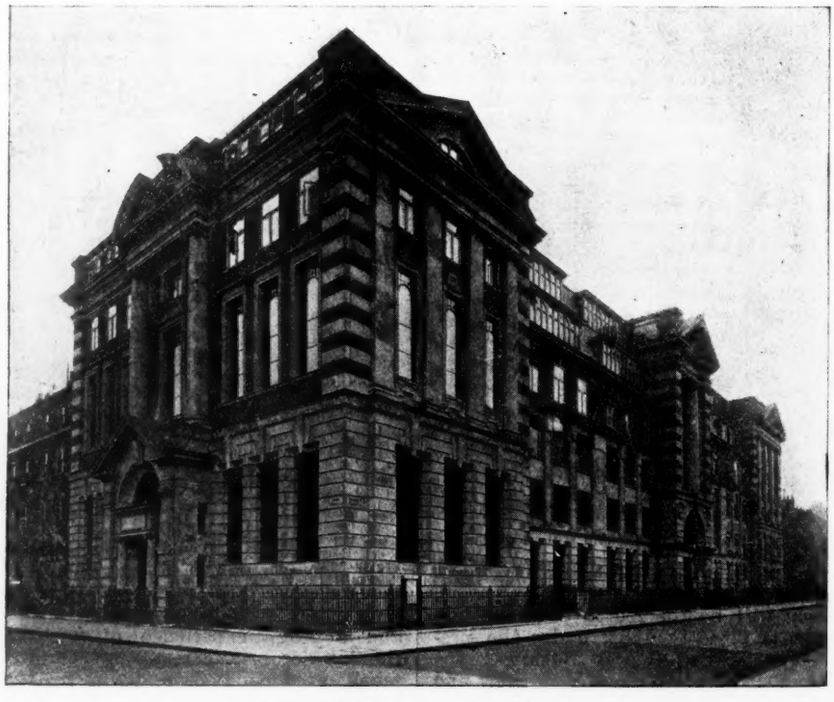
Westward, just beyond the south side of Trafalgar Square, the fine arches between Charing Cross and the Mall, hardly finished at the moment of writing, will by the time the Association meets, have placed an entirely different aspect on the view in that direction from the Association's premises. The southern end of Whitehall has been widened to an extent that now renders that thoroughfare worthy of its traditions and associations; and the new Government buildings erected along its sides are quite in keeping with these changes. All these alterations are to be found within a short walk of the Association's home. We might go further afield and describe others equally as important, the result of both public and private enterprise: the Victoria and Albert Museum at Kensington, the Roman Catholic Cathedral at Westminster, the Great Central Railway terminus in the Marylebone Road, the Central Criminal Courts in the Old Bailey, and so on. But we must content ourselves with saying that the member to whom we alluded above might spend an entertaining day in visiting the chief alterations that have been carried out during the last ten or fifteen years. This undertaking is the more easy to accomplish on account of the ready means now in existence for getting about from one part of London to another: the network of tube railways, the old but renewed and electrified "underground," the ramification of the electric tramways, and the motor vehicles on the roads—all of which, with the exception of the South London tube and the tunnels of the "underground,' have been introduced since 1895.



University College Hospital.

But though we cannot attempt even to enumerate the many changes that have been made in London, there are some which from the professional point of view are interesting and important though they might fail to attract the attention of the layman. We refer to the alterations and improvements in the hospitals, and also in those buildings which are devoted to medical education. To the person who has not kept himself conversant with what has been done in this direction, these will be found, in several instances, to be almost startling. During the fourteen years that have elapsed since the third London meeting more improvements of this kind have been brought about than during the twenty-two years between the second and third, or, indeed, we believe we may truthfully say, than during the thirty-three years between the first and third meetings. Some of the hospitals and schools have been entirely rebuilt; others have been altered and enlarged beyond recognition; none have been suffered to remain as they were. In this and succeeding articles we propose to give a short account of the alterations that have been made, taking first those hospitals to which medical schools are attached, and to point out some of the features which we believe will prove of most interest to those members of the Association who may be visiting these institutions next July.

The reader of the accounts which follow must bear in mind that they deal only with recent additions to and improvements in the hospitals and medical schools of the metropolis. Hence there is more to tell of some than of others. All the medical schools are constituent colleges of the University of London, the head quarters of which are in the Imperial Institute at South Kensington. But while some of the medical schools undertake to educate the student during his preliminary as well as purely professional studies, others confine their attention to the latter. Of the hospitals dealt with in this first article, St. Bartholomew's provides the complete course of study, while the medical school of University College Hospital concerns itself only with the final courses, the courses in such subjects as anatomy and physiology forming parts of the Faculty of Science in University College.



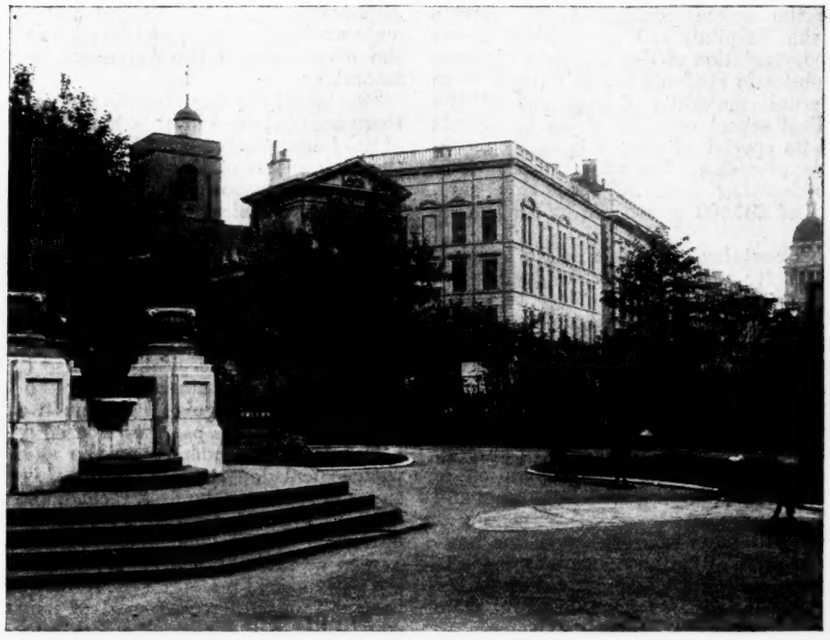
University College Medical School.

University College Hospital and Medical School.

Since the Association met in London in 1895, probably no metropolitan centre has undergone greater change than the Faculty of Medicine of University

College and the associated institution, University College Hospital.

In the first place, following as a direct result of the change in the character of the University of London from a mere examining body to one which has also assumed the characters of a teaching university, it has been found advisable to sever the association between University College and University College Hospital, a connexion which had existed since 1828. To effect this change an Act of Parliament was required, in consequence of which the hospital and medical school are combined under one and the same controlling body, which is distinct from that of University College, the Senate of the University of London.



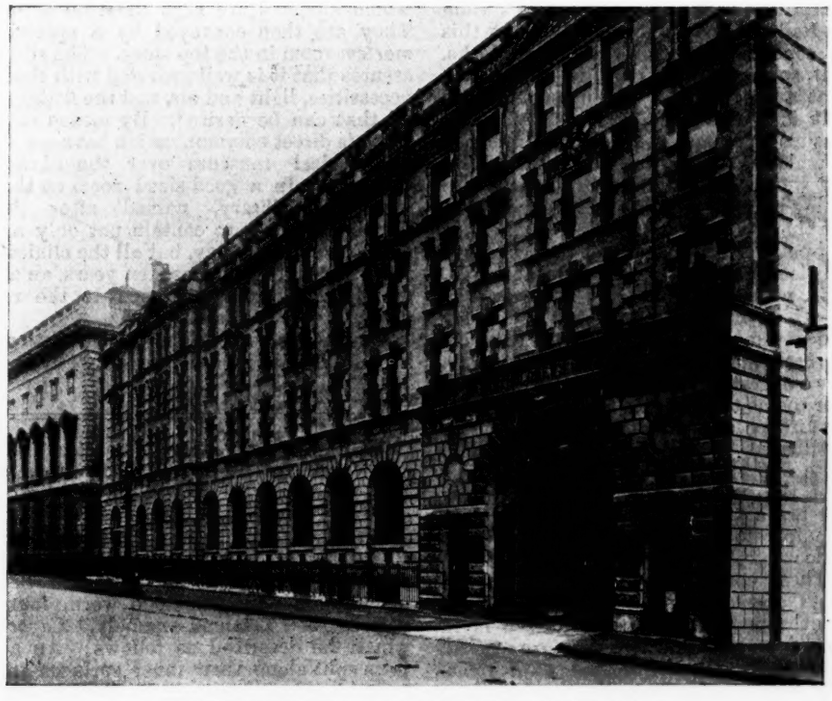
St. Bartholomew's Hospital.

In the college the preliminary subjects are taught—anatomy, physiology, chemistry, etc.—and it was only on June 18th last that the splendid institute of physiology was opened by Mr. Haldane, the Secretary of State for War. A full account of this building was given in the JOURNAL for June 12th. In the medical school the student pursues his final studies—medicine, surgery, etc.

The second great change appeals more readily to the visitor, as, being of an architectural nature, it is an apparent one. Through the munificence of the late Sir Blundell Maple, Bart., the old and very insufficient hospital has been entirely rebuilt at a cost of over £200,000.

The design of the building, which is on the site of the old one at the top of Gower Street, marked a departure from the ordinary type of kindred institutions, and the model has already been copied in the erection of at least one other hospital. This building, in plan, resembles a Maltese cross—there are four wings and a central administrative block. By means of this design there has been secured, on a site twice the size of the former building, one which allows of rapid and easy administration, a perfect sanitary system, and the maximum of air and sunshine. Three of the wings are given up to the provision of ward space, and the fourth to residence for the nursing and resident staff. The basement of each wing, and the space between these wings, provide accommodation for out-patients and special departments. A handsome waiting-hall occupies the base of one wing, and provides ample accommodation for the out-patients awaiting treatment. The sanitary offices, kitchens, and bath-rooms occupy separate towers at the outer ends of each wing, and are cut off from the wards by bridge-ways.

A feature which strikes the keynote of one of the most modern developments of hospitals is the provision of a clinical pathological department, which, with the *post-mortem* room, occupies the upper floor of one wing. The hospital is now provided with three operating theatres instead of with one, and special wards are set apart for the treatment of typhoid fever and diphtheria, and one of the most modern developments is the provision of an internal maternity department. The total number of beds provided by the hospital is 305.



Pathological Department, St. Bartholomew's Hospital.

University College Hospital is not the only metropolitan hospital which has turned its attention to the teaching of only the final medical studies, but it is the first hospital to build and equip a medical school for this purpose; the building, therefore, will be of interest to the visitor anxious to learn not only what is the trend of final medical studies, but also what steps are being taken in London to prepare for the advances which are likely to be made in the near future. The school authorities have spared no efforts to prepare for these advances, and owing to the thoughtful benevolence of the late Sir Donald Currie, their efforts in

this direction have been rendered possible. The medical school occupies the south side of that part of University Street which lies between Gower Street and Huntley Street. This imposing structure has added very considerably to the architectural features of the neighbourhood, and most skilfully there is incorporated in the edifice a nurses' home, for the accommodation of the private nursing staff of the hospital, and a students' house designed for the accommodation of the obstetric registrar and assistant and obstetric students whose duty it is to work in the external maternity department of the hospital. The medical school occupies about two-thirds of the edifice, and its special character is easily recognized by the ample provision of window space. The total cost of the building was £80,000; this sum, with a further sum of £22,500 was given by Sir Donald Currie.

The Medical School contains a very complete appointment for the purposes for which it was designed. The visitor will find the usual administrative offices, two large lecture theatres, three specially designed demonstration laboratories for chemical pathology, bacteriology, and morbid anatomy, a very handsome library, a large museum of pathological anatomy, a forensic medicine museum, a suite of rooms for the Students' Medical Society, including a large gymnasium and refectory, two large examination rooms, a fully-equipped department for operative surgery and bandaging, and workrooms for the preparation of media for the cultivation of bacteria, a centrifuge room and incubator rooms.

The feature which will most impress the visitor, however, is the elaborate preparation that has been made to provide facilities for research in the Department of Pathology. A number of research rooms have been set aside for this purpose, each provided with hot and cold water, electric lighting, and electric or water-motor power. The charges for the rent of these rooms have been made as moderate as possible, and during the last year all the rooms were engaged.

ST. BARTHOLOMEW'S HOSPITAL AND MEDICAL SCHOOL.

St. Bartholomew's Hospital contains 744 beds, and is situated in West Smithfield, near Aldersgate Street station on the Metropolitan Railway. The new buildings at this ancient foundation consist mainly of two large blocks. The most important, so far as size goes, is that which has been erected, at a cost of £120,000, upon a site in Giltspur Street. It is a five-story building, which at once fills the eye as we approach the hospital from the Old Bailey. Its foundation stone was laid by the King in July, 1904, and it was opened by the Prince of Wales in July, 1907. Passing beneath a large arch, we reach the entrances—of which there is one for men and another for women—to the out-patient department. Entering, we find on the ground floor a spacious and comfortable hall, 140 ft. long and 45 ft. wide, surrounded by some twenty rooms, nearly all of which are lighted from the top, for the examination and treatment of patients by the casualty physicians and surgeons, assisted by senior students. There are, besides, two operating rooms and a dental room. In these ground-floor rooms the patients are sorted out for further examination, if necessary, in the special departments which are situated in the floors above. The arrangement of these departments is briefly as follows: On the west side of the hall on the ground floor near the entrances there are a staircase and lift which communicate with the upper floors. From each side of the staircase on each floor stretches a suite of rooms, six to eight in number. These comprise a waiting room, rooms for clinical assistants and clerks, a clinical laboratory, a private room for the member of the staff who is in charge, and, in those departments where they are needed, an operation room, sterilizing room, and dark room. Medical and surgical patients are seen on the first floor, where also are rooms for the detention of doubtful cases; on the second floor are the three departments for the diseases of women, of the ears, throat, and nose, and of the eyes; while on the third floor are the orthopaedic department, with a room for massage and Swedish exercises, and the skin, dental, and electrical departments, including the *x*-ray rooms. Each of these departments has been arranged most ingeniously and carefully with a view to the comfort and convenience of patient and medical attendant alike; and each is so complete in itself as to minimize as much as possible the length of time a patient has of necessity to wait. On the ground floor, at the north-east corner of the building, is the dispensary, and if any visitor wishes to see how a large dispensary should be arranged and fitted, especially with a view to saving time, let him inspect this one. Beneath the dispensary, in the basement, is the pharmaceutical laboratory.

Besides all the departments and rooms just enumerated there are contained in this block the residential quarters of the junior staff (house-physicians, house-surgeons, etc.), the club rooms of the Students' Union, which are quite distinct from those of the residents, a clinical lecture theatre, a chemical laboratory, and a room for practical instruction in public health. In the basement of the club is a miniature rifle range.

The other important addition to St. Bartholomew's Hospital is the Pathological Block, which was opened so recently as May last. This building is situated close to King Henry VIII's gate, and cost £30,000. We term it an "addition to the hospital," because it does not require a very intimate acquaintance with the work carried out in this block to recognize how much at the present day the welfare of the patients housed in or attending at a hospital are dependent upon the skill and industry of a pathological department. From this point of view the suites of rooms on the first, second, and third floors are the most important, devoted as they are to the pursuit of bacteriology, histology, and chemical and clinical pathology in all their branches. By a well-devised scheme all the pathological material sent from the hospital is received in one room, where a record of it is taken; thence it is distributed to the various laboratories according to what is required. In the laboratories for chemical pathology and bacteriology respectively are placed mural tablets to the memory of Mr. G. A. Kingdon, F.R.C.S., and Mr. Alfred Boyd, two benefactors of the hospital. There are two laboratories, in which three or four men can comfortably work, for special research.

The ground floor is occupied by the offices of the Medical School. In the basement is a cold chamber, in which subjects are kept until an autopsy can be made. They are then conveyed by a special lift to the *post-mortem* room in the top story. The situation of this room assures that it is well provided with those most important necessities, light and air, and the fittings and adjuncts are all that can be desired. By means of a covered bridge there is direct communication between this floor and the pathological museum over the library in the school buildings. In a good-sized room on the third floor is the Memorial Library, named after the late Professor Kanthack. It is to contain not only a special collection of books on pathology, but all the clinical and pathological notes of cases for the last ten years, an arrangement which greatly facilitates reference to the records of former patients.

It will thus be seen that the pathological block at this hospital is not to be surpassed by any in the kingdom.

(To be continued.)

AT a meeting of the Zoological Society of London on November 9th, Mr. S. F. Harmer, M.A., F.R.S., Vice-President, in the chair, Professor E. A. Minchin exhibited two specimens of a *Cysticercus* stage of a tapeworm found by him in the body cavity of the rat-flea (*Ceratophyllus fasciatus*). Dr. R. T. Leiper, F.Z.S., exhibited specimens of some rare helminths of man, including a new nematode worm found in abscesses in natives of Trinidad—namely, *Lagochilascaris minor*, which he described as follows: An ascarid with three jaws split along their inner surfaces and separated from body by a deep furrow. Small cuticular labia intermedia. Narrow keel of cuticle projecting from body in region of lateral bands. Oesophagus simple. Male 9 mm. in length, with over twenty-four pairs of pre-anal and with five pairs of post-anal papillae. Spicules solid at tips, sickle-shaped, measuring 0.35 mm. and 0.4 mm. in length. Female 15 mm. long. Vulva 6 mm. from mouth. Ova round, with thick and pitted shell. They can be seen at the London School of Tropical Medicine.

LITERARY NOTES.

It is now close on two centuries since Port Royal was closed by order of the King of France. Naturally there has been much talk in the French papers about Pascal and his penitential girdle, and the other solitaries who lived in the famous abbey. Of one who was not the least important of them the public press has had little to say. This omission is repaired by the *Chronique Médicale*, which gives an account of Jean Hamon, who was a physician and also the tutor of the youth who afterwards became celebrated in French poetry as Racine. Hamon was a Norman and was born at Cherbourg in 1617. He studied medicine in Paris and gained considerable reputation in the Faculty. The way to fortune was open before him, and he was on the point of contracting an advantageous marriage when the exhortations of an enthusiastic priest induced him to join the Port Royal community. He was then 33 years of age. He sold his books and everything belonging to him and distributed the proceeds among the poor. He threw himself with ardour into the monastic life, never failing, however, to go to Paris periodically to discharge his duties as one of the Doctor-Regents of the Faculty while he held that office. He practised his profession for charity among the sick of the monastery and the district round about. With a stick in his hand and a Bible in his pocket, he made all his visits on foot, although he often had to go a distance of several leagues from the house. Only in the last years of his life, when his legs became weak, he rode upon an ass. When the persecutions against Port Royal began Hamon was included among those named in the *lettre de cachet* of November 9th, 1664. A grateful patient warned him in time, and he was able to escape arrest by flight. It was not till August, 1665, that he was able, by an authorization from the Archbishop of Paris, to return. But he was kept under close supervision, and could not even visit his patients without being accompanied by the porteress of the monastery, and he had to speak loud enough for her to hear all that he said. At night he was locked up in his room. He bore all these indignities with resignation. One of his last acts in connexion with the Medical Faculty was to appear as President of the Commission before which the son of one of his oldest friends, Dodart, was to defend his thesis for the doctor's degree. This was in 1687. The old man was a quaint figure in his old-fashioned doctor's robes, but he had taken care to read up some of the classic authors beforehand, and acquitted himself of the task with success. Returning to Port Royal, he reached home very tired, took to his bed, and died a few days afterwards, aged 69. The Faculty had his portrait placed among those of its celebrities, with some verses by Boileau underneath.

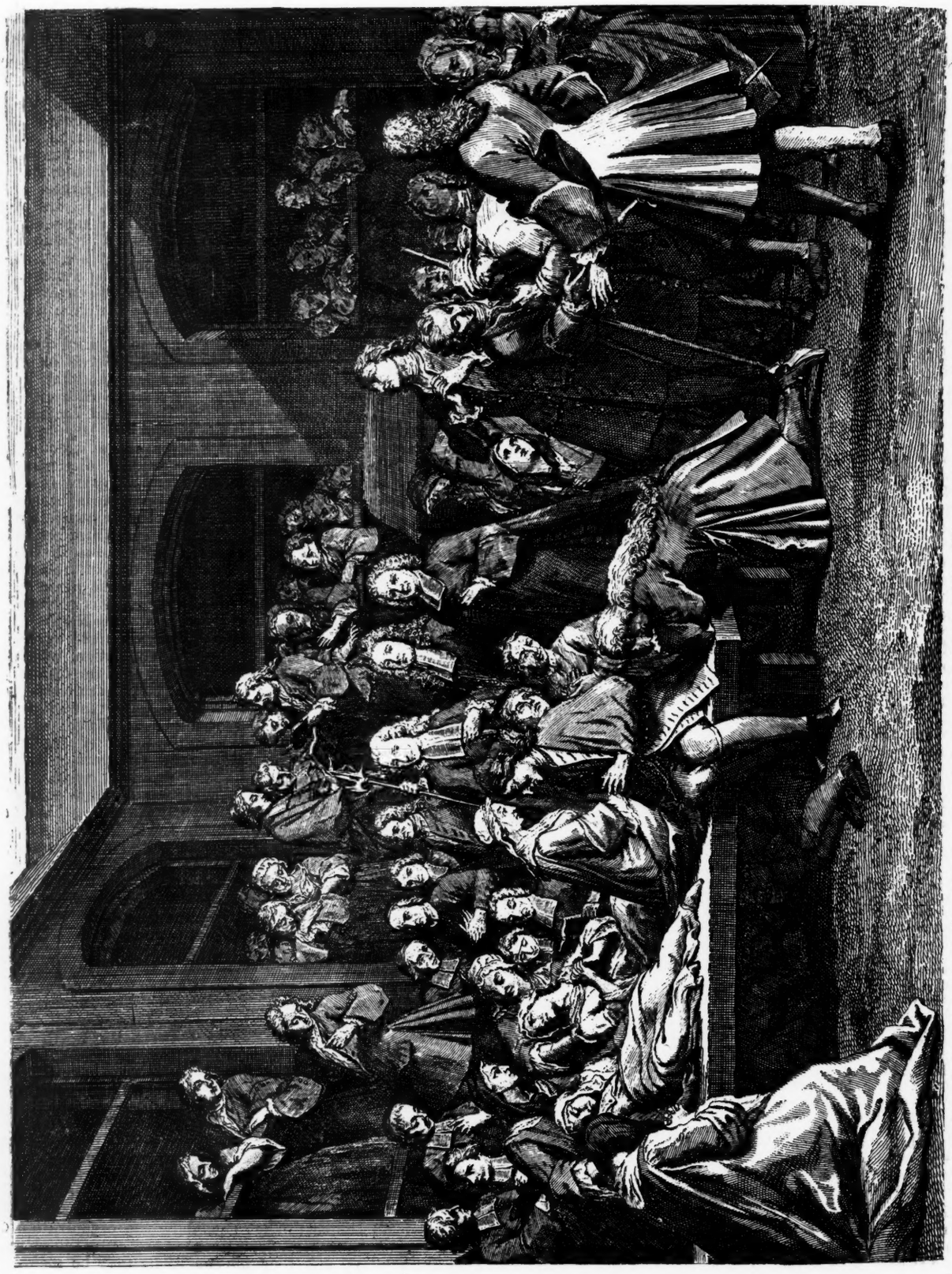
In the *Vieux Souvenirs* of the Prince de Joinville the following gruesome story is told:

> Jamaica was still celebrated for its rum at the time of our visit, and my father (Louis Philippe) had strongly recommended me to bring him back a barrel of it, a commission which I did not fail to execute. In regard to this barrel, however, a lamentable accident occurred. Brought to France, and duly lowered into the cellars of the Castle of Neuilly, it was there forgotten for a long time, when one fine day its existence was remembered, and the King ordered that some of the contents should be served at the end of dinner. All the guests licked their lips at the prospect. But a disenchantment awaited them, and the tasting of the rum was followed by frightful and universal grimaces. It was horrible. An inquiry was made, with the following result. A distinguished specialist in mental diseases, who had been ordered a sea voyage for the restoration of his broken health, had obtained leave from the minister to sail in the *Hercule*. Passionately interested in his speciality, he did nothing, wherever we stopped, but collect brains of men or beasts, which he at once ticketed and put into a barrel of alcohol absolutely resembling my barrel of rum. The rest may be guessed. The two barrels had got mixed up, and my father and his guests got a *rhum de cerveau* (the pun is impossible to reproduce in English).

The story reminds us of the old conundrum: What British admiral was killed in action and yet came home in good spirits? The answer was Nelson, whose body is said to have been conveyed to England after Trafalgar in a cask of rum. The story goes that the sailors drank the cask dry on the way home. This used to be a common way of bringing home the bodies of dead warriors. Marbot, in the *Mémoires*, mentions a general whose remains were accidentally left in a room at the Val-de-Grace military hospital for many years. When some person of an inquiring turn of mind had the barrel opened long afterwards the body of the defunct hero was found well preserved, but embellished with a beard reaching down to his waist. This the veracious chronicler assures us had grown after his death. If only the brand of spirits could be discovered, what a fortune there would be in it for any one who should advertise it as a hair restorer!

In the opening address in connexion with the eighty-ninth session of the Belfast Natural History and Philosophical Society, which was delivered on November 9th, the President, Sir John Byers, whose interest in all questions of language, dialect, and folk-lore is known, dealt with "The Ulster Dialect." The Ulster dialect was considered first analytically in relation to peculiarities of vocabulary, pronunciation, and idiom. It was a form of language spoken by the people themselves, and especially by those residing in the country districts. This dialect had been handed down from father to child since about the commencement of the eighteenth century as a spoken rather than as a written language; and it had remained wonderfully constant, being preserved by tradition and by the ear and voice of the people. It was really an admixture of all the various languages introduced from time to time into the North of Ireland, as well as of the original native Celtic, an amalgam being produced by their interaction on each other. In certain districts—especially in those parts of Antrim, Down, and Londonderry adjoining the sea-coast—the dialect was largely, as might be expected, Scottish; but even there words of Scottish origin not found in any English dictionary abounded. The original Scottish words in many instances had been considerably altered, and the type of words found in some of these places, as well as the pronunciation given them, showed that they were of an earlier origin than those found in other Scottish settlements in the North of Ireland. In other parts of the North of Ireland, the vocabulary was more clearly English, while again in many parts the words in use were more distinctly Celtic; yet in almost every district of the North of Ireland there was a certain admixture of words, idioms, and phrases, and even of pronunciation, which would enable an educated observer to say that the dialect, though it undoubtedly might show local peculiarities, was of the Ulster type. Sir John Byers gave many illustrations of the characteristics of the Ulster dialect as a whole. He showed that there were few forms of expressions which brought out in bolder relief the peculiarities of any dialect than the sayings and proverbs constantly used; the Ulster dialect was in that respect exceptionally strong. It was said by some that such phrases exhibited a certain poverty of language among the individuals employing them, and that accordingly they used a particular expression with a general application which their hearers thoroughly understood; but Sir John contended that these sayings indicated that they were really examples of intensity of thought employed by a most observant people, whose tendency was to be laconic and not to waste words on circumlocutions of speech. In order to bring out in concrete form the special peculiarities of the Ulster dialect, he gave a very full account of many diverse words, phrases, idioms, and proverbs associated with two most important Irish factors—the pig and the potato. Finally, with the view of illustrating a comparison between the North of Ireland and other dialects, he took one of the best known and most frequently quoted literary items and gave it in modern English, as well as in the Scottish and Ulster dialects. The lecture embodied the results of years of close observation and of varied collecting.

At the International Medical Congress recently held in Budapest Dr. L. L. Seaman, as a member of the Board of Trustees of the New York Museum of Safety and Sanitation, offered a prize of 2,500 kroner for the best essay on the following subject: What should be the organization and status of the medical department of any army in order that its sanitary and hygienic conditions may be maintained at their highest efficiency, so that in the emergency of battle its units may best respond to the call of its commanders? The award will be made by the Executive Committee of the Seventeenth International Medical Congress, London, 1912.



TOMB OF THE BLESSED FRANÇOIS DE PÂRIS, DEACON OF THE CHURCH OF PARIS, WHO DIED MAY 1ST, 1727, RENOWNED BY INNUMERABLE MIRACLES AND STRIKING CONVERSIONS.

Nova et Vetera.

MODERN FAITH HEALING.

THE MIRACLES OF THE DEACON DE PARIS.

In the "ages of faith" shrines of healing were so numerous that the rivalry between them led to specialism, St. Roch taking plague, St. Lazarus leprosy, St. Anthony erysipelas and gangrene, St. Guy or St. Vitus chorea, St. Lawrence burns, St. Job ulcers, for their several provinces; St. Benedict was believed to interest himself in diseases of the bladder, while piles and other affections of the lower bowel were the speciality of St. Fiacre, whose relics were brought to the bedside of Richelieu when he was dying of cancer of the rectum. St. Phillibert was in great repute for colic; there is a stone called by his name between Quimperlè and Moëlan which is believed to give immediate relief to the sufferer who rubs his stomach upon it. St. Gildas in Brittany, St. Menoux in the Bourbonnais country, St. Dizier in the Upper Rhine district, St. Dymphna at Gheel in Belgium, cured insanity, and many saints were credited with peculiar efficacy in fulfilling the hopes of wives who longed for offspring. The renown of some of these shrines goes back beyond Christianity, but, as in the case of certain rites and festivals, they have been absorbed by it. In Brittany there is a dolmen in the Côtes du Nord now called *le lit de St. Jean;* another in Finistère goes by the name of *le lit de St. Rouan.* Mr. Rowland Prothero says of these stones, in his *Pleasant Land of France:*

> The stones served as places of sacrifice and of burial, as temples, sanctuaries, landmarks, bounds, and, like the stones of Bethel and Sinai—so their common name of *témoins* implies—as pillars of testimony. In the ancient Eastern world similar stones passed from symbols of eternity and emblems of divinity into Gods themselves. So, too, in the degeneracy of Druidic Pantheism, upright obelisks first symbolized the forces of Nature, and then received the worship of deities. Rude as they are, they were scarcely rougher than the statue of Venus at Paphos, which was nothing but a simple conical stone.

The history of these shrines is interesting to the student of psychology, or what Falstaff irreverently called the brain of this foolish-compounded clay, man. It is a shallow philosophy that dismisses them as mere superstitions and imposture. Superstition and imposture there were, no doubt, mingled in varying proportions; and imposture became more and more predominant as faith decayed. This is illustrated by the story of the lady who, on her way to a shrine held in great repute for the cure of barrenness, was met by some one who told her it was useless for women to go there to seek for children as *le grand chanoine qui les faisait est mort.*

Imposture and superstition both continue to flourish rank and poisonous in the midst of our boasted civilization. The progress of knowledge, among more notable achievements, has explained away much that was looked upon as miraculous by our simple-minded ancestors; it has revealed to us the mechanism of the miracle. But while we are beginning to recognize the power of the mind over the body, we are still far from a full understanding of the range of that power or the conditions in which it works. Only by a study of faith healing in its manifold forms can we learn these things. By scientific analysis of the facts and critical weighing of the evidence we must strive to separate the large element of superstition from the active principle of truth which gives them such potency as they possess.

Homoeopathy killed the old belief in the exorcism of disease by drastic medication, and showed that the human organism can be trusted to deal with many ailments, if left to itself. In the same way faith healing—another example of like curing like—is slaying the superstition of the miracle. To prevent misunderstanding, we wish to make our position clear. We do not meddle with theology, and we therefore consider the signs and wonders recorded in Holy Writ as being, for our purpose, outside the sphere of discussion. We are concerned here solely with "miracles" which rest on human testimony. Renan, echoed by Matthew Arnold, said airily that miracles do not happen. So far from this being true, miracles—in the sense of cures wrought by no known physical agency—happen every day. We are taught that the laws of Nature are immutable; but this is only one among many examples of the way in which man's mind is dominated by names. "Nature" is a creation of our own minds, and her "laws" are but a provisional synthesis of man's own gained knowledge at a particular time. To the contemporaries of Samuel Johnson the power of steam would have seemed "miraculous"; twenty-five years ago wireless telegraphy would have appeared miraculous to many; to-day the aëroplane would be accounted miraculous by a large proportion of mankind. What a great surgeon, happily still with us, called the "miracle of cure" is more wonderful than any of these things. We know that the mind is acted upon by the body. Byron found more inspiration in a dose of Epsom salts than he did in the waters of Hippocrene, and prophets would have had their outlook on life brightened by attention to the "bowels" of which they so often speak. It is not surprising, therefore, that the body should be acted upon by the mind. The old aphorism that happiness is the best of tonics is profoundly true; and the power of hope in curing disease is as well known as the deadly influence of despair. To neglect these factors because we cannot yet express the mode of their operation in terms of physical knowledge is to leave a vast field of possible usefulness to quacks and ignorant mystery-mongers.

We have at different times given sketches of the manner in which the influence of the mind on the body has been put to use in antiquity and in modern times. They serve to show that, with the widest variety in particulars, all the methods have this in common: that the treatment is directed to arouse the mental or spiritual powers of man's being to act upon his body. In the Journal of April 17th, 1909, we gave an account of the seventeenth century healer Valentine Greatrakes. In that article his "cures" were compared with those said to have been wrought at the tomb of the Deacon Pâris at the beginning of the eighteenth century. A description of some of these will serve to carry the history of modern faith healing somewhat further. Valentine Greatrakes professed to believe that God had chosen him as a means of healing disease for the following reasons:

> The first is to convince this Age of Atheism, who cannot yet believe Jesus to be God, when they see pains and diseases to vanish, and evil spirits flye his Power; as I have good cause to believe the Falling-sickness and other Distempers I have met withal sometimes to be. Next, God may, to abate the pride of the Papists that make Miracles the undeniable Manifesto of the truth of their Church, make use of a Protestant to do such strange things in the face of the sun, which they pretend to do in cells.

The "miracles" of the Deacon Pâris were held by those who believed in them to be for the glorification of Jansenism and the confusion of the Jesuits who were its bitter opponents. By way of introduction to the account of cures, a word or two must therefore be said about the theological dispute which rent the Church of France in twain for more than a century, and bulks large in the history of the reign of Louis XIV and his successor.

Jansenism was an attempt to restore the ancient Christian doctrine and discipline. Unlike the Reformers, however, its adherents wished to do the work they thought necessary without leaving the fold of the Catholic Church. They professed to derive their peculiar doctrines, which consisted in denying the freedom of the will and the possibility of resisting divine grace, from St. Augustine. Cornelius Jansen, or Jansenius, from whom the system took its name, was born in 1585 at Accoy in Holland, became professor at Louvain and later Bishop of Ypres. He died in 1638. His *Augustinus*, the work in which the opinions which formed the basis of Jansenism are contained, was published two years later, and excited great attention in the Low Countries and in France. In 1642 it was condemned by Pope Urban VIII. The publication of the Bull was resisted by a number of Flemish bishops, who were supported by the University of Louvain. It was, however, accepted by the King of France and the Sorbonne, but the Jansenists were numerous and powerful and were not easily suppressed. In 1649 five propositions from the work of Jansenius were submitted to the Sorbonne, and a commission was nominated to examine them. The Parliament, which as a body leant at this time towards Jansenism, interfered, and referred the inquiry to the assembly of the clergy. In 1651 Pope Innocent X was appealed to by a large proportion of the French bishops, and he appointed a commission

of five cardinals and thirteen theologians to examine the propositions. This commission sat for two years, and the Jansenists were heard at full length in their defence. In 1653 judgement was pronounced and the propositions were condemned. Shortly after the issue of the Bull an Edict of the French King ordered it to be accepted. Jansenism, however, remained an active force in the French Church, and numbered among its adherents many persons of note, the most illustrious of whom was Blaise Pascal. They concerned themselves not only with theology but with education, and though strict to the degree of Puritanism in their moral teaching were intellectually very advanced. The history of the famous community of Port Royal has been charmingly written by Sainte-Beuve.

Fig. 1.—Marie Anne Couronneau.

The Jansenists, who were determined not to sever their external communication with the Church, tried various ways of evading the effects of the Pope's Bull. Arnauld, then their leader, expressed his willingness to reject the five propositions, but denied that they were to be found in Jansenius, or that if they were there as forms of words, they were not to be construed in the sense attached to them in the Papal Constitution. We need not follow the history of the Sect, for such it had become, through the intricacies of theological controversy. It is sufficient to say that in a further Constitution, issued in 1656, the propositions were again more absolutely condemned by Alexander VII. A further condemnation of Jansenism, together with the death of Arnauld in 1694, and the destruction of Port Royal in 1710, practically marked the suppression of Jansenism. The controversy flickered on, however, for a few years more, but in 1715, on the death of Louis XIV, who had always been opposed to Jansenism, an appeal was made on its behalf to a future council. This appeal was rejected by a Papal Bull issued in 1729. The Jesuits, who had throughout been the bitterest opponents of the Jansenists, were now victorious. Jansenism was at the last gasp, and miracles were wanted for its revival. These were found in alleged cures wrought at the tomb of the Deacon Pâris in the cemetery of St. Médard. It should be said in justice to him that he had nothing to do with the manifestations of superstition, folly, and fraud with which his name is associated, these having occurred after his death.

Fig. 2.—Marie Anne Couronneau.

François de Pâris was the son of a councillor in the Parliament of Paris, and was born in that city in 1690. At an early age he was placed under the care of the Canons Regular of the Congregation of St. Géneviève. As a schoolboy he was not only so idle that he forgot his letters, but he tried to set fire to the College. After a time he was put under the care of a private tutor, who instilled into him the love of study. When he had finished his education in Arts and Philosophy he wished to become a Benedictine, but being the eldest son and intended to succeed his father, he was made to study law, in which he graduated. He felt himself drawn to the priesthood so strongly, however, that he was allowed to throw up the law and enter a seminary. He gave himself up specially to the study of Greek and Hebrew in order that he might better understand the Scriptures. In the intervals of study he acted as catechist, spending much of his money in giving books to those whom he instructed. His father, who died in 1714, left him only one-fourth of his estate, and his fortune was still further diminished by the bursting of the famous Law bubble. In due course he was ordained deacon, but being a strong Jansenist he refused to sign the required declaration. The way to the priesthood being thus closed to him, he gave himself up to a solitary life and had dreams of founding a new Port Royal. He took up his abode in a small house, where he gathered together a few clerics who lived under a common rule. He gave away his own income in charity, and lived by the work of his hands. His austere mode of life undermined his health, and he died in 1727. At that time, as has been said, a miracle-working saint was wanted by the Jansenists, and they found him in the poor Deacon who had given his life to the succour of the poor and the maintenance of what he held to be the truth. Soon people crowded to the little cemetery of St. Médard, where he was buried; they kissed even his grave, and carried away the earth as a precious relic. Pilgrimages were organized, and soon reports of miracles wrought at the grave began to get about, and Cardinal de Noailles, Archbishop of Paris, who had been one of the Appellants, as they were called, authorized the erection of a marble tomb, and made some kind of inquiry as to the truth of the reports. The Archbishop died in 1728, having previously, it may be said in passing, recanted his Jansenism. Several of the parish priests of Paris asked his successor, de Vintimille, to continue the inquiry. By this time enthusiasm among believers had increased to such a pitch that the tomb had become the scene not only of cures but convulsions and attacks of frenzy which were supposed to be means by which the healing power operated. The inquiry demanded was held, and in 1735 five miracles chosen for the purpose were after rigorous examination declared to be false and illusory.

Three years before this, however, the Government had shut up the cemetery, an act satirized in the epigram

cited in the article on Valentine Greatrakes, in the Journal of April 17th, 1909:

De par le Roy, défense à Dieu,
De faire miracle en ce lieu.

Of this epigram a wicked wit of the day said that the surprising thing was the immediate obedience with which the Almighty obeyed the Royal ordinance.

The enthusiasm of the sectaries, which had throughout been more fictitious than real, quickly subsided, and the memory of the miracles would doubtless have perished had they not been recorded in three huge volumes by a fanatical believer named Montgeron. This man's career was sufficiently remarkable to deserve a short mention, especially as it throws light on his temper of mind, and will help the reader to appreciate the value of his testimony.

Louis-Basile Carré de Montgeron, a Councillor of the Paris Parliament, was born in that city in 1686. In the earlier part of his life he was a profligate and a scoffer at religion. His unstable temper of mind may be judged from the fact that after an accident which happened to him in 1707 he fled in terror to La Trappe. Soon, however, his passions once more got the upper hand. In 1719 a considerable increase of fortune enabled him to gratify them to the full. In 1731, happening to hear of the miracles at the tomb of the Deacon Pâris, curiosity led him to visit the cemetery. The sight of girls convulsed and testifying—some at least of whom, it is said, were paid for the performance—wrought a sudden conversion in the soul of the sinner. So frantic an enthusiast did he become that in the following year, when the Parliament got into trouble with the King on account of its obstinate attitude in regard to Jansenism, he was banished to Auvergne. Solitude only made the flame of his enthusiasm burn more freely, and he determined to write in defence of the miracles. On his return to Paris his house became a refuge for other fanatics, who exalted his zeal by their applause. On July 29th, 1737, he went to Versailles and presented his book — the first of three volumes which he produced on the miracles—to the King, who accepted it without knowing what it contained. On the same day he presented copies to the Duke of Orleans, to the first President, and to the Procurator-General. On July 30th he was sent to the Bastille. He was afterwards banished successively to Villeneuve-les-Avignon, Viviers, and Valence. His zeal in the cause of Jansenism increased till his excited brain became altogether disordered. This fanaticism made many of those who had been his admirers turn their backs on him, and he was disavowed by the Appellant bishops. He fell into utter discredit, and died at Valence in 1754. Montgeron's book, the second volume of which was published in 1741, and a third in 1748, is a monument of superstition. The three volumes mark different phases in the evolution of one of the most extraordinary crazes recorded in history; they also indicate distinct stages in the advances of his mental disorder.[1] It would be unprofitable to stir the dead ashes of a theological controversy; but a short account of its "miracles" may be instructive as showing the height—or depth—of absurdity to which fanaticism may carry an educated and intelligent man. The first volume deals with cures said to have been wrought by prayer through the intercession of the Jansenist saint. The patient was laid on the tomb, and the process was somewhat analogous to that known as "incubation" (see Plate). The second brings us to a further stage, in which faith was supposed to work by convulsions, during which the disease was healed. In the last we reach pure hysteria and frenzy, convulsions being reinforced by what were called violent "aids" (*secours*) in which girls asked to be cured of pains in the stomach, or of nothing in particular, by blows with clubs and iron instruments, the application of great heat, etc. They were supposed to be invulnerable even to stabs with swords, and this was believed to be a manifestation of the grace of God working for the conversion of sinners. A few examples of cases falling into each of these categories may be given.

Fig. 3.—Philippe Sergent.

Fig. 4.—Philippe Sergent.

Cures by Prayer.

The first case recorded at length by Montgeron is that of Marie Anne Couronneau. We give the description as far as possible in the author's words, as this will help to give the reader a notion of the exaggerated style of his narrative. She was an unmarried woman, born at Saumur in 1663, the daughter of one of the richest merchants of the place, who unfortunately was infected with the poison of heresy. Providence in its mercy took her away from her parents in her childhood, and handed her over to charitable persons who had her brought up on the milk of truth and in the principles of the purest piety. But while she thus received grace she lost the benefits of fortune; she preferred, however, to live in poverty rather than to dwell in the tents of sinners. She preferred to be a servant in a Catholic country to being a rich woman among heretics, and always refused to go to her parents in England. She had thus gone on bearing the burden of life with courage till November 1st, 1730, when an attack of apoplexy took from her in one moment speech, consciousness, and strength. Bleeding, emetics, and two other medicines gave her a little relief. Her strength

returned, but not completely. Her speech was indistinct, but she could make herself understood. A week after returning from the Hôtel-Dieu, where she had had her first attack, she was suddenly seized with a feeling of icy cold and numbness over the whole left side, so that she could hardly drag herself into a neighbouring house, where she had convulsions, and again lost the use of speech. With great difficulty she was taken back to her mistress. Emetics were once more given. She was bled from the arm and the foot, and several other remedies were given, which alleviated, without curing, the disease. The difficulty in speaking and walking were much greater than after the first attack. Some time after she got worse, becoming weaker every day. On December 19th, 1730, her speech being more embarrassed than usual, she was sent to the Hôtel-Dieu, where she had a sister a nun. As soon as she arrived at the hospital, Dr. Seron gave her an emetic and afterwards bled her from the throat, as well as from the arm and foot. These remedies had no other effect than to weaken her. They were therefore abandoned, and, as incurable cases were not kept in the hospital, on January 16th, 1731, an intimation was sent to her mistress to take her away. The nerves and muscles of the left leg were so relaxed that it hung much lower than the right, and it was impossible for her not only to lean on it, but to lift it, and, all her left side being paralysed, she could hardly do anything with her hand. It took three persons to carry her in a chair up the stairs of her mistress's house. She could only speak half words and indistinctly. Obliged to remain in bed or sitting in an armchair, it was not long before bedsores were added to her other troubles. Her anxiety to go to church made her ask by signs for crutches, but she soon found she could make no use of them without something to help her to move the paralysed side. She therefore had a foot sling made which she fastened on herself with braces supported on her two shoulders and hooked on to a belt. This not being enough, she attached to the sling a second bandage from the left leg passed round the right arm, and in this way, by pulling up the leg, she could move. In order to make this movement she was obliged to throw herself backwards and to make contortions and grimaces so awful as to frighten all who saw her (Fig. 1). In this way she was able to go to church, where she attracted general attention. In this deplorable state, on March 26th, 1731, she decided to go to St. Médard. Her mistress offered her a carriage, which she refused, thinking that her prayer would be more likely to be heard if she made the journey on foot.

Fig. 5.—MADEMOISELLE COIRIN.

Fig. 6.—MADEMOISELLE COIRIN.

This, considering her state, seemed impossible, but a lively and animated hope does not take obstacles into account. She therefore started at dawn of day with her apparatus. She was obliged to rest almost at every step to take breath, and reached the tomb only about 10 o'clock. For two hours she prayed, but instead of receiving the relief which she expected, she found herself more helpless than before. But she did not lose faith, and with great difficulty got home about 8 at night. Her right hand, of which she had been obliged to make incessant use to drag along her paralysed side, was so cramped that she lost use of it entirely for nearly three weeks, but, always ingenious, she had a third strap which she twisted round her paralysed limb, attaching the other end to the head of the right crutch. In this way she was able to bear the whole weight of her left leg on her right hand. This new expedient giving her more facility in walking, she soon made up her mind to go back to St. Médard. She did so in the following April, not so much to ask for a cure, but in perfect submission to the will of God. After this second visit, there was a little more action in her paralysed arm, but without any return of sensibility. She could speak a little better, but her left thigh and leg still remained without movement or sensibility, so that pins could be thrust into them without her noticing. She still required all her apparatus to walk. Her mistress fell ill on the evening of May 24th, 1731, of a malignant and very dangerous fever. Couronneau was very much attached to her mistress, and, scared by the danger in which she seemed to be, she went to the tomb to pray for her. M. Bailli, a physician of great reputation, and M. Boudou, senior surgeon to the Hôtel-Dieu, came every day to the mistress. There they saw always Couronneau at the foot of the bed. Out of pity they examined her, but judged her disease to be incurable. On June 13th, however, she set forth with her crutches, etc., and was laid on the tomb. There she prayed, not for herself but for her mistress. All at once, in the midst of the transports of her ardent prayer, she felt a tightening and movement in the heel of her paralysed leg. She thought at first that her straps had given way, and feared she would not be able to get home. She was taken off the tomb to make room for other sufferers and placed again on her crutches, but she had scarcely taken a few steps when she felt an extraordinary lightness in all her body, accompanied by quiverings all over the paralysed side. She noticed, too, that the foot had recovered its power; she raised her crutches on high, and so quickly did she walk that, according to herself, she could have

followed a coach, and in a moment she was at home in a great state of excitement. She was now strong and vigorous, and had become a new creature. She recovered her speech, her arm could be moved with ease and power; the hip, leg, and foot, which were like those of a corpse, were restored to a vigour much beyond her age. Impatient to show herself to her mistress, she ran upstairs, threw away her crutches and went to the bedside, where she told the great news (Fig. 2). Every one was immensely surprised, especially the two doctors who had seen her the day before, and who recognized in her the work of God. As they say in a certificate which is given, they saw her suddenly cured, speaking, walking, and working with facility. By the next day she ran from one end to the other of Paris to show herself to all who knew her, and among others to the Sisters of the Hôtel-Dieu, who knew all about her condition. From that day she enjoyed robust health, was more agile and vigorous than ever beyond her age, which was now 73. She was able to go about from morning to night visiting all the sick people she knew and carrying them on her shoulders to the tomb till the cemetery was closed. What became of her sick mistress we are not told.

Fig. 7.—Marie Jeanne Fourcroi.

Another case was that of Phillipe Sergent, a wool carder, born at Mons in Hainault, and living at Dinan in the district of Liége. He got married on September 27th, 1727, and about the feast of St. Martin in the same year he was attacked by paralysis affecting the whole of the right arm. A physician of the town bled him, but this gave no relief, and dimmed his eyesight so that he became incapable of reading. Two days later he felt in the loins, the arms, and the thighs various convulsive movements. These tremblings increased during a week, and soon became almost continual. He felt cold all over his body. In February, 1730, he fell into a faint, in which he remained without consciousness from 6 o'clock in the morning until night. This, says Montgeron, was evidently an attack of apoplexy. After that attack the whole of his right side seemed dead. The thigh, the leg, and the arms became bluish. He lost all sensibility in the limbs, and although there was still some power of movement in the arms and hand, he was so weak that he could not put his hand to his mouth. The thigh and the leg were an inert weight of which he could make no use. In the month of March an "operator" undertook the case. He rubbed him with an oil which he called "philosophic," which diminished the trembling of the loins and of the thigh of the left side. With regard to the right side, he fell into an extreme wasting, especially of the thigh and leg. The empiric seeing him in that state left him, assuring him that only God could cure him. He went again to the doctor, who made him use a bath full of medicinal herbs. This did no good. In a few months the right thigh and leg became so thin as to be nothing but skin and bone. The "nerves" shrunk so much that the thigh and leg became some 3 in. shorter than the left ones. After this he noticed that he had no longer any movement in the knee, which remained always a little bent. The bones of the leg and of the thigh became ankylosed, and the foot seemed as if stuck to the end of the leg, the heel being raised, and the toes pointing downwards. In May, 1730, he was seated by the fire, and being overpowered by the sight of his own complaints, he took a burning ember, applied it to the calf of his right leg, looked on calmly while the skin and the flesh burnt, resolved, in his own words, to allow it to be completely consumed if the fire was not capable of restoring sensibility, and wishing thus to deliver himself from the afflicting sight and the useless weight of a limb which seemed to him dead. His wife, noticing the smell of burning flesh and seeing the smoke rising from his burning leg, rushed forward, tore away from him the instrument of his madness and reproached him. The doctor was consulted a third time, and recommended him to go and take the baths at Aix-la-Chapelle, giving him a certificate, dated June 19th, for admission to the hospital of that town. On the 22nd of the same month, M. Maréchal, curé of Dinan, gave him another, in which he testified that for a period of nine months he had been in a state of paralysis which no remedy could cure. On that day he had himself carried by two men to a boat, which conveyed him to Namur and thence to Liége, where he took a coach to Aix. There he took the baths during fifteen days, night and morning. The waters somewhat strengthened his loins, but produced no effect on the paralysis and withering of the right side, on the dimness of vision, or the almost continual tremor of the right side. Losing all hope of cure, he had himself taken back to Dinan, where he passed a year in the utmost poverty, subsisting on charity and such work as his wife could get to do. Then he went to Rheims in search of help. He arrived there with his wife and child, and was at first charitably received by a man who employed a number of workmen in carding wool. As the work could be done in a sitting position and required no great strength in the right hand, he hoped to be able to do it. He soon found, however, that his right arm became tired as soon as he made the smallest movement. Moreover his wife was

Fig. 8.—Marie Jeanne Fourcroi.

unable to earn enough for their living. He therefore had recourse to a lady who advised him to go to Paris, where he would easily gain admission to the Bicêtre, a refuge for the poor, and especially for paralysed persons unable to gain their living. He reached Paris on June 24th, 1731. After some delay he was admitted to the Bicêtre. A few days later an uncle came to see him, and told him of certain miracles worked at the tomb of Pâris; but he paid little attention to them, knowing nothing, as he said, of that saint. Nevertheless, on the 24th of the month, his wife having given him a detailed account of a miraculous cure of which she had been an eye-witness, he felt confidence awakening in his heart, and made up his mind to make a novena at the tomb. With the greatest difficulty he reached the tomb, supported on a stick, a crutch, and helped by his wife (see Fig. 3). It was not till July 10th, the third day, that it pleased God to manifest upon him the effects of His infinite goodness. On that day, between 8 and 9 o'clock in the morning, he had himself laid on the tomb, and suddenly felt sharp pains throughout the body, but principally in the thigh and right leg. At once those corpse-like limbs became agitated with extreme violence. The witnesses declared that the shrivelled and dried-up "nerves" of these withered limbs made a noise like the crack of a whip, so prodigious was their convulsive agitation. God, says the author, doubtless intended this in order to warn the spectators to be attentive to the marvel which He was beginning to work. At that moment the paralysis ceased, the ankylosis disappeared; the shrunken legs stretched, the dead and dried parts became reanimated, the blue limbs recovered their natural colour. The man raised his head, and the mist which had been continually before his eyes since November, 1729, was completely dissipated. Transported with joy and gratitude, he stood up straight on the tomb, and found himself so perfectly cured that all his limbs had from that moment whatever agility and force they had ever had. He took the first book that he saw in the hands of one of the spectators and intoned the Te Deum (Fig. 4). A thousand voices joined his; there was a cry from all sides of "A Miracle!" The man was able within five days to take up the work which he had had to drop at the beginning of his disease. The Lieutenant of Police is cited as one of the witnesses of the paralysis, while "the most furious enemy of miracles," Frère Coëffrel, acting priest of Saint Médard, after having examined the sick man at different times, gave an authentic certificate, while the Procurator-General, who had witnessed the cure, was so touched that he shed tears. His aunt, wearied by the continual crowds of people brought to her house by the news of the miracle, hired a room two steps below the level of the street. The wall everywhere sweated with damp, but Sergent took up his abode there notwithstanding the repugnance of his wife, who was afraid for herself, and five days after his cure he began work again. For nine months he felt not the slightest inconvenience. He had been six months living poorly by the work of his hands, when a person of good appearance came and asked him why he boasted that he had been cured on the tomb of M. de Pâris. Sergent replied that he only said so because the miracle was evident, and because nothing would prevent him from publishing it and giving glory to God. "But," said the visitor, "you seem to me very uncomfortable. You are here lodged in a kind of cave which resembles a dungeon; you have only a poor little bed and some straw chairs for all eternity. If you will trust me I will make your fortune. I will hand you 100 pistoles if you will sign this paper I present to you, in which you state that you have only said you were cured at the tomb of M. de Pâris because you had been induced to say so, but that in truth you were cured before you went and laid yourself on the tomb." Could irreligion and wickedness, exclaims the author, go further? He slyly adds that it was not credible that the man was a pupil of the Jesuits, a representative sent by the Archbishop of Sens (who set his face firmly against the miracles), or an emissary of the police. At any rate, the offer did not tempt Sergent. In April, 1732, he was warned that an order had been given for his imprisonment. He therefore fled, and wandered about, visiting Rheims, Dinan, Namur, Mons, and Liége; but nowhere could he find a permanent shelter. The print of the Divine bounty, says Montgeron, stamped on those animated limbs of this paralytic, was sufficient to make him proscribed in all regions under the sway of the Jesuits. "It seemed as though he bore on his brow a sign which made him recognized." At last he returned to Paris, and recorded in a public document the proofs which he had collected of his cure.

Fig. 9.—CATHERINE BIGOT.

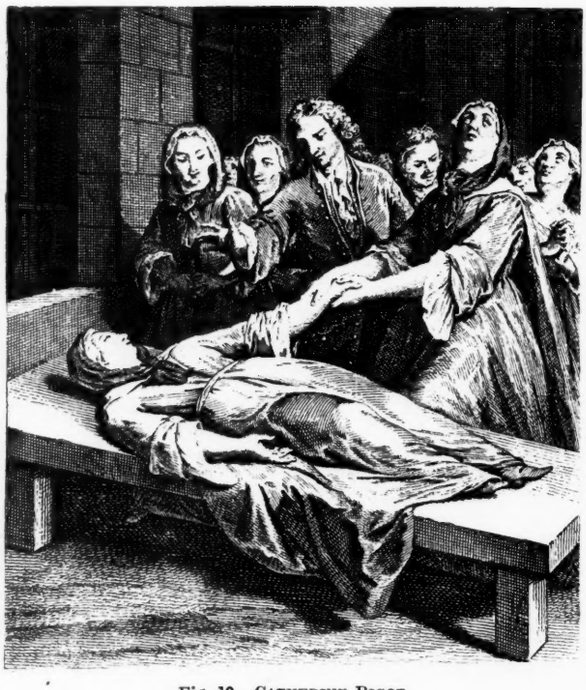


Fig. 10.—CATHERINE BIGOT.

A third case is that of Mademoiselle Coirin, who, in September, 1716, when she was 31 years of age, fell from horseback on her stomach and hurt herself considerably. Her father-in-law nevertheless obliged her to mount her horse again, but the animal having run away, she fell a second time on the left side of the stomach on a heap of stones. This caused her so much pain that she fainted. There appears to have been no proper treatment, and she concealed the fact that she felt pains in the stomach for

four days after her fall, hoping, as she said, that they would pass off. On the contrary, they increased daily, and in a few weeks she began to vomit her food, mixed with clotted and decomposed blood, the aspect of which made Dr. Moulant, physician, and M. Bordeaux, surgeon, of Paris, express the opinion that she had an abscess in the stomach. Thenceforward she vomited blood almost daily, and this made her often faint. Three months after the fall it was noticed while cloths were being put on her stomach that the left breast was extremely hard, swollen, and violet coloured. A surgeon of Nanterre examined the breast, and found that a cancer had formed stretching from the nipple upwards to the axilla. It was so hard that it had forced the arm backwards in such a way that the patient could not move the limb forward. Attempts were made to disperse the growth by means of poultices, but the only effect was to draw a considerable amount of blood from the nipple without affording any relief. The cancer, little by little, infected the mass of the blood by gross and corrosive salts, and caused obstructions even in the brain of the patient. In the beginning of 1718 the whole of the left side suddenly became completely paralysed; the arm, the leg, and the thigh were cold as death. Remedies were in vain. In 1719 the left nipple, which had been eroded all round by the cancer, fell out, leaving in its place a deep hole, from which there incessantly exhaled a cadaverous odour, and from which a reddish and putrid pus flowed continually. The doctors, at the sight of the ulcer, declared that she could not live much longer unless the breast were forthwith removed. To this the patient at once consented, but when the operation was about to be performed the mother became frightened, and as the doctors would not promise that the operation would cure her, she refused to allow it to be done. Just before the time of her cure her sufferings were aggravated by exhausting vomiting and diarrhoea; by dropsy of the lower part of the abdomen causing oppression; by retention of urine and a deep ulcer which caused her to feel the sharpest pain. She remained bedridden in this condition for many years (Fig. 5). At last she thought of invoking the intercession of Pâris. She sent a virtuous woman of Nanterre, charging her to make a novena at his tomb, to touch a chemise with it, and to bring her back some earth from it. On the following day she said she had never felt so bad, but on the evening of the next day she had hardly put on the chemise which had touched the tomb than she felt almost on the instant the beneficent virtue conveyed by the garment. She suddenly regained her strength and was able to turn herself in bed. This exciting her hope, on the next day she applied the earth from the tomb to her cancer, and at once remarked with surprise that the deep hole from which there had flowed for twelve years a foul pus had begun to heal. The next night her limbs, which had been paralysed for so many years, suddenly became reanimated, and warmth and movement returned. She got up without assistance and put on her clothes and dressed her hair. At this moment her servant came into the room and was thunderstruck at seeing her mistress clothed and freely using her two hands (Fig. 6). From that moment every day witnessed new marvels. The news of the miracle soon spread. Those who had known the condition she was in could not believe the truth of it; her two brothers—one valet de chambre to the King, the other one of His Majesty's Body Guards—came to see her and were convinced, although the positions they occupied did not predispose them easily to believe in miracles worked by the intercession of Pâris. She went on foot to her parish church, where she had not been for several years. She knelt, received communion, and going out of the church walked still more easily than when she went in. Persons, including surgeons, to whom she showed her breast recognized that the cancer had disappeared, and that God had been pleased to create a new nipple in the place of that which had fallen off twelve years before, and "that this nipple, although it had only just begun to grow, had already, notwithstanding its smallness, all the colours and qualities belonging to that part." The "enemy" made a last desperate effort to hide the truth, spreading on all sides the rumour that in August, 1733, a cancer had again attacked her breast, and that she had relapsed into paralysis. She therefore went to Paris, and put in the hands of a notary the proofs of the condition in which she had been for so many years, and of the completeness of the cure. At the same time she had her breast examined by a surgeon of the first reputation, who, although attached to the Court, did not hesitate to testify that she seemed to be in perfect health, that there was no trace of cancer, and that the breasts had each a nipple, normal in form, colour, and quality, there being no difference between the right and the left. This, says the author, proves that after the miracle the left nipple had acquired its natural size, although the lady was then 47.

Cures by Convulsions.

Of the cures by convulsions, only two instances need be given. In one case the patient was Marie Jeanne Fourcroi, the daughter of a grocer of Paris. She was born in 1706, and had been a mass of infirmity in her infancy. The deformity first showed itself at the age of 5. The following is her own account: "In 1711, being then aged 5, I fell into a languid state, all my body became entirely deformed and twisted. The spine of my back curved and took the form of an S, which made me extremely hunchbacked towards the right shoulder and above the left hip. These two parts of my body were much raised up, whilst on the contrary the left shoulder was pulled down and there was a great hollow about the right hip, the false ribs being retracted. I had all (*sic*) the clavicles displaced, and my head was placed much more on the left than on the right, so that my left shoulder was very short and the right was about double the length."

Many other illnesses afflicted her in succession: at the age of 10 great pain in the chest and stomach; she spat blood and vomited sometimes even faecal matter, and was sometimes several days without being able to swallow anything. These infirmities were always relieved for a time by the different remedies used, but the stomach and chest were always painful, and she remained almost without eating from 1716 to March 21st, 1732. In January, 1731, she had a severe continued fever with exacerbations. This reduced her so that she could hardly use her limbs. She tried to get up to make her bed, and, wishing to change its situation, she made a great effort to push it with her left foot, with the result that she dislocated it. The result was swelling and pain, increasing every day for fifteen months. On April 2nd, and again on the 9th and 15th, she was examined by a skilful demonstrator and by five famous surgeons, who certified that her condition was incurable (Fig. 7). She says herself that from the time of that accident she had not slept a single moment, her foot never having ceased to cause her pain day and night. She became so helpless that she had to be fed like a child. Things went on getting worse. The fever and pains of the stomach and chest still continued with the other diseases. She became dropsical, for which she was given a strong medicine which made her pass a large amount of water, but "which agitated too violently the acrid and caustic liquid which inundated her blood, and these irritated humours spread at once to the eyes." Her eyelids in a few days closed entirely, so that she could not raise them except with her fingers, but even then she could see nothing at all but light as through a thick mist. The surgeon gave her a lotion, but this made her worse. Having read the life of Pâris she conceived the hope of being cured by his intercession. Before the end of the first day of her novena her eyes were suddenly and perfectly cured. The dropsy diminished considerably, the fever fell, the diseases of the chest and stomach were mitigated, the ankylosed foot, although still disabled and displaced, was less painful and she could support herself on the little toe. About the middle of December, 1731, she had herself taken to the tomb to return thanks. She was at first frightened by the screams and howls which she heard from those convulsed in the cemetery and was inclined to go away without going near the tomb. She remained, however, and in her own account she says that after about a quarter of an hour in prayer she all at once felt pains through all the body and movements which made those about her say that the convulsions were about to come on. She was frightened and went away, but she adds that she was punished for this by an increase in her dropsy and exacerbation of her fever, with occasional delirium. In less than two months her face, arms, and feet were reduced

to skin and bone; on the other hand, her belly, thighs, and legs became of a monstrous size. The swelling rose daily higher up towards the chest and embarrassed her respiration. She was bled altogether 150 times from the arm and 46 from the foot. These bleedings made her very weak, and after a time, she says, no more blood could be drawn, and only water came! Death appeared imminent, and she was given at midday a little wine in which earth from the tomb had been placed, and began a novena. "The prodigious effect produced instantly by the respectable dust which she had swallowed revealed the judgement of God." She was seized, she says, with great shivering, and soon after a great agitation in all her limbs, which made her throw her whole body into the air, and gave her a strength she had never had, so that it was with difficulty that several people could hold her back.

During these violent movements she said she lost consciousness. Instead of weakening her already weak body, these powerful convulsions were like a vivifying balsam which restored calm to her blood and gave her strength and health. She also had a great feeling of internal peace. The fever, suffocation, pain in the chest, ceased absolutely and never came back. At the same instant the dropsy diminished and almost entirely disappeared; strength and colour came back, and appetite such as she had never felt since her childhood. Only the ankylosis still remained uncured. About this time the then Provost of the Surgeons described the foot and the spinal curvature to be incurable. The author speaks of frightful calumnies against her because in 1733 she no longer seemed hunchbacked, at least when she was dressed. He seems a little inclined not to insist too much on this part of the miracle. Suddenly, while she was violently convulsed in the presence of several persons, the infirm foot became natural (Fig. 8). When her convulsions ceased she was as surprised as the other people to find her foot in its natural state. She walked and jumped about and sent for five of the surgeons, who found that everything was natural and could find no trace of deformity in the skin, bone, muscles, or tendons. Each of them drew up a separate report in which they testified that such a cure could only have been wrought by supernatural means. A famous physician came the day after the cure to see her. She took the opportunity of showing him her back. He drew up a report almost in the same terms as that of the surgeons, and after careful examination certified that the cure of the ankylosis was perfect. From that time she walked quite easily.

Another case was that of Catherine Bigot, who was known as the deaf-and-dumb woman of Versailles. She had been so deaf from her birth that she could not hear the report of a pistol fired close to her ears (Fig. 9). She was placed on the tomb on August 27th, 1731, at 7 o'clock in the morning. On the instant her face became pale as death; she fainted, and a moment afterwards was thrown into such strong convulsions that it was difficult to hold her. She showed by gestures that she suffered very severe pains in the head, the ears, and the throat; she wagged her head from side to side so quickly that her features were not recognizable. The woman who had brought her, amazed at a sight which had not yet become familiar, took her off the tomb, but she showed that she wished to be replaced thereon. No sooner was she there than the convulsive movements and pains began again; the suffering expressed on her face was so great that the bystanders feared that she would die (Fig. 10). In spite of herself, she was three times removed from the "sanctuary of benediction"; each time she showed by gestures her eagerness to be put back. This seemed all the more remarkable, as her deafness had prevented her hearing anything of the miracles wrought at the tomb, those around were therefore astonished to see her kiss it with every mark of respect, devotion, love, and confidence. On the morning of August 31st she suddenly gained her hearing and began to speak. She talked incessantly from morning till night, imitating all the sounds she heard as if she wished to make up for the years of enforced silence. All Paris came to see her, and many of the witnesses who testified to the miracle—persons of the highest respectability, including several clergy, magistrates, and Councillors of Parliament—are named by Montgeron. Medical evidence and that of people who had known her from birth are also given in detail.

REFERENCE.

[1] The titles of the volumes, each of which is in reality a separate treatise, are as follows:

La Vérité des Miracles Opérés par l'Intercession de M. de Pâris et autres Appellans. Demontrée contre M. l'Archévêque de Sens: Ouvrage Dédié au Roy. Par M. Carré de Montgeron, Conseiller au Parlement de Paris. Tome Premier. Nouvelle édition. Revue & augmentée par l'Auteur. A Cologne: Chez les Libraires de la Compagnie. M DCC XLV.

La Vérité des Miracles Opérés par l'Intercession de M. de Pâris et autres Appellans. Demontrée: Avec des observations sur Le Phénomène des Convulsions. Par M. Carré de Montgeron, Conseiller au Parlement de Paris. Tome Second. Nouvelle édition. Revue & considérablement augmentée par l'Auteur. A Cologne: Chez les Libraires de la Compagnie. M DCC XLVII.

La Vérité des Miracles Opérés par l'Intercession de M. de Pâris et autres Appellans. Demontrée: Avec des Observations sur le Phénomène des Convulsions. Par M. Carré de Montgeron, Conseiller au Parlement de Paris. Tome Troisième. A Cologne: Chez les Libraires de la Compagnie. M DCC XLVII.

They are illustrated with splendidly executed engravings, some o which are here reproduced.

(To be continued.)

THE OLYMPIA MOTOR SHOW.

(*Continued from page 1482.*)

General Trend of Design.

Before proceeding to notice certain novelties not mentioned last week a further reference to the general trend of design, as exemplified in the show, will not be out of place.

Engines.

In engines only minor variations are to be found. The Aster Company exhibits a four-cylinder engine made in one casting, and so compact that it is almost difficult to believe that it has four cylinders. This engine has its valves and valve stems completely enclosed—an arrangement which tends to silence, and is now not uncommon. The Knight engine, with its sliding sleeves replacing the ordinary valves, is seen on the Daimler and the Minerva stands; and there are two examples of engines the inlet and exhaust valves of which take the form of pistons working in small cylinders; these also are more silent in action than the ordinary mushroom valves. The "Valveless" two-stroke engine has undergone only slight changes in minor details, and this is true also of the Dolphin two-stroke engine, but no other makers appear to have adopted this type of engine. Up to the present time the two-stroke engine, that is to say, an engine which has an explosion on each stroke, appears to have found more favour for motor boats than for cars. No example of an engine with rotary valves, of which a good deal has been heard, was noticed on any of the stands.

The Clutch.

The old leather-faced cone clutch has by no means been displaced, but is still to be found on many of the finest cars, and is really very satisfactory in use, though a good many have adopted some form of multiple metal disc clutch.

Ignition.

With respect to ignition the frequency with which a high tension magneto is the sole ignition is quite remarkable, as is also the rarity of two absolutely independent ignitions by accumulator and by magneto. This is to be regretted, as, notwithstanding the immense improvement in the reliability of the high tension magneto, the so-called dual ignitions, in which the accumulators make use of some parts of the magneto, do not offer the same security against failure. It is quite possible to have an ignition failure with this type, in which both ignitions are disabled, so that it is impossible to get home.

Carburetters.

The infinite variety in carburetters shows that although on the whole modern carburetters are fairly efficient, nothing like finality in their design has been reached.

Several of the multiple jet type were shown, extra jets coming into play as the call for petrol becomes greater. In the Scott-Robinson carburetter there is only one jet, but its orifice is varied by the ascent or descent of a flattened needle which enters it, and is raised or depressed according to the air suction at the moment. Another interesting jet adaptable to any carburetter was the

De Beers, shown by the Petrol Economizer Company. The top of this is domed, with the hole in the summit of the dome; inside this is a loosely-fitting piston, the sides of which have deep spiral grooves. The piston can rise or fall a short distance under the influence of the rush of petrol, and the issuing petrol is given a whirling motion in the dome. The practical effect is that it issues from the hole in a spread-out spray, which facilitates the complete vaporization of the petrol, apt to issue from the usual simple hole in a stream rather than in a spray; it is claimed that by this device the petrol feed is regulated automatically, so as to give a good mixture at all engine speeds.

Transmission.

Chain drives are rapidly disappearing now that it has been found that even for high-powered cars the cardan shaft system is quite adequate.

The worm drive, as applied to the differential in lieu of the usual bevel pinion, formerly almost peculiar to the Dennis car, has gained several adherents. There is no doubt that it is more silent than the bevel-pinion drive, especially after a little wear.

The Humphriss gear, described last year, has, at all events, demonstrated that its system of a pinion-carrying knobs, which engage in spherical depressions round a plate, is capable of much work without showing appreciable wear, for a gear which had run very many thousand miles was exhibited, and was almost as good as new. This system of change speed gearing has been somewhat slow in making its way, but it will not be surprising if it prove of importance in the future.

With regard to change speed gears, the various modifications of epicyclic gear have not gained ground, and some form of Panhard sliding gear with the "gate" change is to be found on the vast majority of cars. The Delaunay-Belleville has not adopted the gate change, but retains one, more or less peculiar to itself, in which the driver in some sense feels his way into the several gears without the use of a notched quadrant to determine the positions.

We may recur for a moment to the hydraulic transmission exhibited by the Motor Mercantile Association in order to give some additional details. The box, full of liquid, in which the fan or paddle-wheel driven by the engine shaft revolves, is of aluminium. It will be remembered that the interior of the box is webbed, that the vanes of the paddles have only a small clearance from the webs, and that when the water is driven round by the paddles it strikes on the web and causes the box, which is connected with the cardan shaft behind it, to revolve. By altering the inclination of the vanes the amount of effect they produce upon the water can be varied, with a consequent variation of speed in the rotation of the box. It should, however, have been stated last week that as the vanes approach their maximum position the box becomes locked to the driving spindle so that a direct drive is attained, the whole apparatus rotating solidly together. An emergency slow speed gear is provided in addition. It is claimed that this method of hydraulic transmission provides very smooth starting and infinite variation in speeds within its extreme limits, and of course does away with noise from the gearing. As the box must be rather large and contains a good deal of liquid there is no great difference in weight between it and an ordinary gear box.

Brakes.

In brakes there is not much novelty except that front wheel brakes have been fitted to a good many different makes of car; the advantage which they possess is that application of brakes to the front wheels on a greasy road does not produce that tendency to side-slip which the sudden application of brakes to a back wheel is so apt to cause. It seems likely that their use, now that the mechanical difficulties which stood in their way have been overcome by Messrs. Liversidge, will become more general.

Suspension.

In the suspension of cars there are some noticeable points.

The Lanchester has the central point of support of its springs pivoted instead of being, as is usual, fixed, while the Amans pneumatic apparatus, to which reference was made last week, is in effect a means of damping the excessive action of the springs by adding an air cushion, and can be applied to any existing car.

The Cowey pneumatic suspension, adopted on a Crossley car, is quite different, inasmuch as it entirely replaces the springs. There are four inverted vertical cylinders with air-tight pistons; the weight of the car is transmitted through the piston rods, the space above the pistons being occupied by air under pressure. Thus the car rests upon four cushions of compressed air supplied to an independent reservoir by an air pump. By an ingenious valve the air pressure in the cylinders is always adapted to the load, so that when additional people enter the car the air pressure is automatically increased. As it is very essential that the oscillations of the car should be confined to the vertical plane extra stays are provided.

Both the Cowey and the Amans suspensions are intended to permit the use of solid tyres. The Cowey suspension does give a complete ease of motion and freedom from jars, though, as at present adapted, it is said that up and down oscillation once started never ceases, and that riders have been made sea sick. There should, however, be little difficulty in damping these oscillations. Whether the Amans suspension is equally efficacious we have had no opportunity to ascertain; but, if it be, it is far easier of application to existing cars. There can be no doubt, of course, that if solid tyres can be used without discomfort and without detrimental effects upon the machinery, a very great saving in running costs will be effected.

Ignition.

The efficiency and reliability of the Bosch and of the Simms magnetos are recognized, but there are several others which present good special features. The Fuller magneto has an excellent and novel form of make and break; all its parts are exceedingly accessible, and can be taken to pieces with the utmost ease. The armature produces a low tension current only, and to transform the armature current there is a separate coil with both high and low tension windings, which is packed away beneath the arch of the horseshoe magnets. As this coil is stationary it has no need of the revolving contacts usual in high tension magnetos; it has spring contacts which make themselves when it is placed in position, and this transformer coil can be removed in a moment, and replaced by another should it fail—no small advantage seeing that it is in the high tension coil that magnetos generally fail when they do fail. In last year's model the condenser was a separate unit, but it is now incorporated with the coil—a more doubtful advantage, as the condensor may alone fail. To facilitate starting, an accumulator or current can be sent through the coil windings, the necessary rapidity of make and break being secured by the addition to the switch of a rotating handle. On the same stand was exhibited an interesting electric geyser for obtaining hot water in a few seconds. The principle on which this acts is not very clear. The heating is attributed to electrolytic action on the water, but it is difficult to see how this should produce the heat; that electrolytic action was active was evidenced by the issuing jet becoming at once turbid through the inclusion of gas bubbles, and the escaping hydrogen could be ignited in a series of tiny explosions if a lighted match were held close to the jet. The current consumption is large—some 15 ampères—but this is unimportant, as the water is heated to near boiling almost instantaneously. It seems more probable that the heat is due to resistance to the passage of the current, and that the decomposition of some of the water is only incidental.

The Thomson-Bennet magneto has two features. In most magnetos the advance or retardation of the spark is obtained at the cost of its being brought to occur at positions of the armature away from that of maximum current, but in this device there is a contrivance for altering the relation of the armature to its driving dogs, so that the break always occurs at maximum position. There is also a contrivance for giving the armature a sharp jerk round through one firing position, so as to render starting easy without the labour of rapidly revolving the whole engine in order to get a good spark from the magneto.

The E.I.C. Company exhibited the Hall magneto, an excellent piece of work, also adapted for alternative accumulator ignition and for ready starting. The Nieuport and the Nil Melior magnetos have also been improved in details.

The Lodge ignition appears in a simplified and much cheaper form: it will be remembered that the main feature of this is the further intensification of the high-tension current by passing it into a condenser, which is in effect a Leyden jar, and employing the sudden Leyden jar discharge for ignition.

Accumulators.

In accumulators the only novelty noticed was the Fors accumulator. In this both positive and negative plates are cylindrical and concentric, being separated from one another by a porous pot, within which the positive cylinder is placed. It is claimed for it that it cannot short-circuit by buckling of the plates; that it can be charged or discharged at any speed without damage; and that it will stand idle for any length of time without losing its charge. If these claims can be substantiated, it should be largely used, especially as this form of construction reduces size and weight.

Tyres.

A large number of tyres were exhibited, more or less on old lines, but a good many attempts to procure resiliency in solid tyres have been made.

One of the most interesting of these is the Lynton wheel. In this there is an inner wheel of pressed steel, which carries the inner flange of the rim and is fixed to the hub. The outer flange is carried by a second wheel which is loose upon the hub, and can move laterally to a small extent. Between the two flanges are packed in numerous separate blocks of rubber, which form the tread and hold the two flanges apart. It is claimed that lateral as well as vertical yield being thus allowed, full resiliency is attained though the blocks are solid.

Another solid tyre has lateral pits extending somewhat deeply into it, which permit it to yield under load, and there are several other devices shown for imparting resilience.

In the Challenge Reinforced Pneumatic the internal tube shares the work of the external cover in resisting the general strain of driving. In effect, it is a light auxiliary cover as well as an air chamber. The reinforcement consists in embedding in the rubber two layers of strong fabric which extends all the way round the front of the tube, ending at its base on each side. Here there is an interval occupied by a strip of ordinary rubber, and this supplies to the tube the elasticity necessary to permit of its expansion so as to fill the cover. The advantages of this tube are obvious. As for possible drawbacks, it might be expected that tyres fitted with these tubes would lack something in resilience, but from the tests conducted by the Automobile Club this would not appear to be the case. Though the idea is still comparatively novel, there is already a considerable body of evidence that tubes of this character will enable the motorist to use up outer covers which have become too weak for use with an ordinary inner tube. Though more expensive than the ordinary inner tube, the device seems likely to effect a saving in the long run.

The Stepney Wheel Company have a device for the same purpose which consists of a reinforced rubber band like an inner tube slit up along its inner circumference. This embraces the whole inner tube, which is placed inside it before inflation, and so is prevented from bulging into any weak place in the outer cover. This also is likely to effect some economy in using up old outer covers.

The chief features of the Torkington are the use of a very thick band of soft rubber embedded under an equally thick band of hard rubber. Between them runs a metal chain binding the two parts together and fixing them to the wheel. It is made in most of the standard sizes, but a special rim having a detachable side flange must be used on the wheel. It is reported to stand high speeds well, and has stood the test of ordinary work on several types of touring car. The Royal Automobile Club has now undertaken to test the tyre by running 4,000 miles on the road, and 100 miles at high speed on the Brooklands track.

Lamps.

The Mangin mirror, which consists of a concave silvered mirror ground out of a solid thick plate of glass, has largely replaced metallic mirrors for the back of acetylene lamps, in which the metal mirrors were apt to lose their brightness in a short time. Self-contained lamps, in which the acetylene generator is not separate, but forms a part of the lamp, have apparently gained in popularity. Messrs. Lucas, Messrs. Ducellier, and Messrs. Powell and Hanmer show a fine selection of lamps; the last-named firm have a good selection at moderate prices, showing a side lamp and a tail lamp (for paraffin) of excellent construction and very cheap for what they are.

The Autoclipse lamp, shown by Messrs. Brown Bros., of Newman Street, provides two rays of light, one penetrating and the other diffused. The idea is to enable the driver to vary his light according to his surroundings, using the far-distance rays when travelling along country roads, but eliminating their dazzling glare when passing through towns or meeting traffic.

Speedometers.

Speedometers are much cheaper than they used to be. Thus the Stewart, a centrifugual speedometer, can now be obtained for three guineas, and Messrs. Harvey exhibit the Frodsham speedometer, somewhat similar in design but of English make, for the same price. This last has for its flexible driving cable a series of small steel blocks with universal joint connexions, a strong form of construction much to be preferred to a spiral wire cable, which generally breaks after some use. The older makes have also been brought down in price by competition, and it is now worth every one's while to fit a speedometer. Not only is it useful as indicating the actual speed at which the car is travelling, but it gives early warning of lessened engine efficiency to the driver, who knows what his car usually does with a certain throttle opening and a certain advance of ignition, and this is of great use if the engine is, as it should be, always to be kept at its best.

Cars of Moderate Horse Power.

A distinguishing feature of the show is the large number of cars of low or moderate horse power. A word of warning as to cheap cars offered by little known makers may not be out of place. Although in the past the price asked for some cars has been unnecessarily high, and could easily have been reduced without the sacrifice of anything essential, yet the merest tiro in engineering work knows well that the difference in the time consumed in making a reasonably good easy fit, and making the best fit obtainable, say in a bearing, is very great indeed. When quite new the two bearings may not show much difference, but the fine fitting will be unaltered after a long period of wear, while the other will soon require attention. There is always a risk that in the endeavour to produce cheaply the ultimate refinements of the work may not receive the time and attention desirable.

A good many cars were described last week, only a few others, which on account of their price or for some other reason seem to call for note, will here be alluded to; it must not be concluded that omissions imply any inferiority.

Delahaye.

The Delahaye 9–11 h.p. appears to be a remarkably sound piece of work, with a very neat and efficient engine, the four cylinders of which are cast in one block; indeed, another maker has paid it the compliment of copying it with remarkable exactitude. The Delahaye is sold by Messrs. Hobson, with body, for about £275.

The Delaunay-Belleville.

The Delaunay-Belleville Company exhibits, in addition to its larger models, a 15 and a 10 h.p., both with six cylinders, and in this connexion it may be mentioned that six cylinders for lower powered cars have been adopted by several makers, although the Napier firm, who were pioneers in the six cylinder work, doubt whether much advantage is gained by the extra cylinders below about 30 h.p. The Delaunay-Belleville is distinguished by the great accessibility of all parts likely to require attention, including the carburetter jet; indeed, most things can be got at and replaced by the fingers without the use of tools, and the magneto can be detached, lifted right away for adjustment, and correctly replaced in a very few minutes.

De Dion.

The De Dion, as already stated, has several improvements, one of the most notable being a means of lateral adjustment to the driving pinion of the differential—a point at which wear is liable to show itself.

Iris.

The Iris—of which formerly only one large model, which attained to high reputation, was made—on this occasion exhibited a 15 h.p., which has the points of the larger model, including a large inspection plate on the differential.

Thames Cars.

The Thames car is the production of the Thames Iron-works, Ship Building, and Engineering Company, which some four years ago commenced motor construction, and within two years had to its credit the all-world record at Brooklands for 50, 100, and 150 miles. This was accomplished at the rate of seventy-five miles an hour by one of its six-cylinder touring cars taken out of stock and not prepared specially for the racing track. The company had five cars on view, of which three were priced at figures running from £160 to £235. The car at the lowest price was a single-cylinder 8 h.p., fitted up as a Victoria; two others, both 12 h.p. double-cylinder cars, were fitted, the one as a coupé and the other as a landaulette. The former is known as the Chirurgeon, and is specially designed for medical use. Its two cylinders are considered to secure for it adequate flexibility in traffic and sweetness in running without involving the increase in the maintenance and petrol consumption brought about by a multiplicity of cylinders. It is stated to be a good hill traveller, and its petrol consumption appears to be low. The first of its three speeds, when the engine is revolving at a normal rate, gives a rate of six miles per hour, the second twelve miles an hour, and the third twenty-five miles an hour. It is driven from the interior, and has a body of unusual construction presenting many advantages. In its ordinary condition it looks like a very neat coupé, but in the space of two or three minutes it can be converted into an ordinary open car. In building the under carriage special attention has been paid to limiting the likelihood of the car creating much dust. This firm, though young in the motor world, has such a long and high engineering reputation behind it that its products are entitled to special consideration.

Ford Motor Cars.

There are several special features about the Ford motor cars, which, so far as chassis are concerned, are of precisely the same model—namely, a 20 h.p. car with four cylinders. The price of the chassis alone is £180, and it was shown fitted up as a runabout, as a touring car, as a landaulette, and as a town car; the lowest price of a complete car was £190, and the highest price £275. Another feature is its unusual lightness, the car weighing only 1,200 lb. Lightness, it need scarcely be said, makes a considerable difference in wear of tyres and petrol consumption, and is due in this case to simplicity of design, elimination of unnecessary parts, and the free use of vanadium steel. The cylinders are cast in one block, the water-jacketed cylinder head being a separate unit, easily removed and replaced when desired for cleansing purposes. The fly-wheel is utilized as a rotor for the magneto generators, and likewise supports the transmission gears, this being one means employed to eliminate unnecessary weight. The transmission is of the Spur Planetary type, which is regarded as making stripped gears impossible. There are two speed gears, the higher, it is stated, making any speed from three to forty miles an hour obtainable by throttle control. The final drive is on the Ford triangular system. The remarkably low price at which these cars are sold is ascribed by the firm to its adoption of the "quantity production" system, its chassis output for the coming year being estimated at 25,000.

Sunbeam Cars.

The two models shown by the Sunbeam Motor Car Company seemed identical in all respects, except that one was a 12–16 h.p. car, and the other a 16–20 h.p. car, and that the latter can be obtained either with live axle or chain transmission at the purchaser's option. Both models can also be obtained with either short or long axle bases as desired. In all cases there are four cylinders cast in pairs, the valves being protected by easily detachable aluminium covers, which act at once as dust protectors and silencers. Lubrication is obtained by a gear-driven pump, which maintains a constant supply of oil filtered in the course of its circulation. The pressure can be varied to suit the requirements of running; uphill the full pressure—namely, 12 lb. per square inch—is available, while downhill and during town work it can be reduced to one-sixth, so as to ensure absence of smoking. Both models have Bosch dual ignition, and power is transmitted by a leather-faced cone clutch. There is direct drive on the top speed, and ball bearings are freely employed throughout. Moreover, there is a special device, a caliper which follows the shifting lever by which two out of the three gears are always locked, thus preventing more than one gear from being engaged at any one moment. When a chain drive is selected the chains run in the oil-bath chain cases, whose introduction by the firm did so much to increase its reputation. The price of the 12–16 h.p. car, fitted with an open body, is £350, of the 16–20 h.p. car, with an open body and chain drive, £475.

Napier Cars.

Among the Napier cars, for whose construction Mr. S. F. Edge is reponsible, the special feature this year was the Colonial car. Its chassis is in most respects identical with the 15 h.p. four-cylinder car of the firm, which is too well known to require description. The principal difference seems to be that a bevel instead of worm drive is used, and that the valves and the springs of the engine are enclosed by a plate to exclude dust and sand. Other modifications designed to fit the car for its special purpose are its wire detachable wheels with 95 mm. and 105 mm. tyres. The large size of the wheels secures for the car a total clearance of not less than 12 in. at any part. Another point is that the gearbox includes an unusually low first-speed gear to enable the car to climb out of a hole or ditch. The water-pipes are of large dimensions, and instead of dual ignition a separate magneto is carried. The body, however, is altogether of special construction, having been designed so as to make the user of the car self-dependent, whatever his distance from civilization. It provides room for everything likely to be required for camping, including guns, stores, table accommodation, spare wheels, reserve water, and a hood which is completely detachable, and when placed on the ground forms a large square tent. In spite of all this provision for touring work, there is plenty of passenger space, and the appearance of the car is by no means unsightly. When not required for its special purpose, the back part of the body is removable, and the car, which ordinarily is intended for five persons, can be converted into a two-seater. The car was designed, we understand, on the suggestion of a gentleman long resident in Rhodesia, and its price complete is £519.

Cadillac.

The claim made by motor manufacturers that their parts are interchangeable is not always borne out in practice, but in the case of the Cadillac cars its truth was established by an independent test conducted a year or two ago in this country. Several cars selected out of a large number were taken completely to pieces, the whole of the parts put in one pile, and new cars built up from the pieces, chosen haphazard, within the course of an hour or so; the cars being afterwards tested and found to work perfectly. The firm, which is one of the oldest established car-manufacturing undertakings, limits its output to two chassis models, a 10 h.p. one-cylinder and a 20 h.p. four-cylinder car. It constructs every part of its cars itself, and puts its hooded runabout on the market in this country at 220 guineas; the cost of the higher-powered car varies with the body construction, from 360 to 460 guineas. Of the reliability of the Cadillac runabout there is no doubt; we have known cars of this construction give satisfaction to their owners for periods as long as six or seven years. The higher priced car also has a good reputation. It has separate cylinders, Splitzdorf low-tension magneto, and an accumulator. The propeller shaft is encased, and though working through a universal joint in an oil bath, has an almost direct drive; the engine, gearbox, and back axle are each provided with three-point suspension. The suspension has been well thought out; front and rear axles have semi-elliptical springs, the rear ones being attached to a transverse by socket shackles.

The steering gear is adjustable, thus ensuring accurate driving without recourse to a factory when parts get worn.

Talbot.

Four of the well-known Talbot cars were shown by the Clement-Talbot Company, all alike possessing four cylinders, double ignition, with nominal horse power varying from 12 to 35. In addition there was shown the chassis of a six-cylinder car (which is a new development of the firm), of 20 h.p., the cylinedrs being cast in pairs. The lowest priced car—a side-entrance open vehicle, with four speeds and a reverse—was £375; and at the opposite extreme was a Limousine priced at £825. In all the cars, we understand, the ignition is on the Bosch dual system, the magneto being driven from the same cross-shaft which drives the pump. The price of the chassis of the six-cylinder 20 h.p. Talbot is £555. The change-speed gear-box is of large dimensions and without a division. The foot brake drum is exceedingly wide, and the pressure is applied by external shoes suspended from the top and drawn together at their lower end by a bell crank lever and cross-connecting rod, easily adjustable by a thumb-screw. The rear end of the chassis is suspended by a transverse spring fixed to two powerful side springs and to an extension of the frame itself. The general carbu retter communicates with the cylinders by an aluminium pipe, and each cylinder has an inlet pipe of exactly the same length. In respect of complete Talbots, the one perhaps best fitted to the needs of medical men in urban and semi-urban districts is the £480 landaulette. Its power is greater than the nominal 12 h.p., and its four gears secure speed suitable alike to crowded streets and open country roads.

Naudin-Sizaire and Crossley.

France and England were equally represented by the exhibit of Messrs. C. Jarrott and Letts. Though considerably modified and improved this year, they are both well-known types, the French car being the Naudin-Sizaire, and the latter the Crossley, which is an all-British car. The French car, the product of a firm of high repute, is a 12 h.p. two-seater monobloc cylinder car, of comparatively simple but very effective design, sold at £215. The piston stroke has been somewhat lengthened to ensure smoother running, and the silencer has been nearly doubled in size. A higher degree of radiation has also been secured, and ball bearings introduced at all suitable points; the hand brakes have been made adjustable by self-locking finger nuts, and a direct drive is now secured on each speed. Of the Crossley cars three were shown fitted up, and one as a chassis. They all have four cylinders, those in the lower-powered cars being cast on the monobloc system, and in the 20 h.p. car in pairs. The 12–14 h.p. type was shown at the Exhibition for the first time, and was fitted with the Cowey pneumatic system described above. Fitted as a phaeton, with a long hood covering both the passengers at the back seat and those on the driving seat, the 12–14 h.p. car is a very graceful but yet workman-like vehicle. Its price complete, with lamps, high side doors, detachable wheels, tools, and some spare parts, is decidedly moderate—£385.

Metallurgique Cars.

Amongst the most attractive cars of comparatively moderate cost was the type shown by Warwick Wright and Company, and known as the Metallurgique, a Continental car with excellent body work. All the models shown had four-cylinder monobloc engines running in nominal horse power from 12 to 26. The first of these is sold fitted up as a hooded Victoria complete for the road at £395. The chassis itself costs £100 less, and of course can be fitted with a body according to the purchaser's special requirements. The makers pride themselves on the silence of this car during running, the economy of its upkeep, and its powers as a hill climber. The valves in the 1910 type are larger than they used to be, and are all operated by a single cam-shaft. The Bosch high-tension magneto is on the engine side opposite the valves, and thermo-syphon cooling is provided. A tell-tale on the dashboard secures supervision of the accurate working of the lubrication, and provision has been made for regulating the working of the engine while waiting outside houses or elsewhere. The price of the 18 h.p. Metallurgique fitted as a double phaeton is £505.

Humber Cars.

Of the Humber car there were shown six models (two chassis and four finished vehicles), comprising three types, an 8 h.p. two cylinder, a 12 h.p. four cylinder, and a 16 h.p. four cylinder. The former, fitted with a two-speed body, Bosch high tension magneto ignition and three speeds, is sold at £200. Since last year its petrol tank has been placed beneath the driving seat, so as to leave the rear portion of the body available for luggage. The 12 h.p. type, fitted as a five-seated open car, costs £285, while the 16 h.p., finished as a double phaeton with high doors to both back and front seats, costs £425. The engine dimensions of the 12 h.p. have been increased by 10 mm. The whole chassis is more substantially constructed. A honeycomb radiator has been fitted, the wheels have been raised from 760 mm. to 810 mm., and a four-speed gear box introduced. This car, as well as the higher powered one, did well during the Scottish and Irish trials last summer. All the cars are fitted with the Humber detachable wheels, with an automatic system of lubrication, introduced early this year with the new 16 h.p. car. The 8 h.p. car carries on its dashboard a tell-tale glass dome, in which a continuous spurt of oil is visible so long as the engine is being properly oiled.

LOOKING BACK; OR, A GLANCE FROM EMPIRICISM TO EXPERIMENT—FROM SUPERSTITION TO RESEARCH.

SIR HENRY MORRIS, Bart., ex-President of the Royal College of Surgeons of England, recently delivered an address to the Middlesex Hospital Medical Society, in which he said that it was by means of experiments which could be planned and controlled at the will of the explorer, and especially by experiments on living animals, that so many of the recent changes had been made in the views held in regard to the pathogenesis and diagnosis of disease, particularly of fevers and the infective diseases of wounds, as well as in methods of treatment. Hippocrates was the first to lead medicine in the right track. He employed experiment as well as observation, and thereby succeeded in freeing medicine from the fantastic speculations of the pre-Socratic philosophers.

Galen, notwithstanding the obstacles he raised by his mistaken and misleading worship of Aristotle, to the progress of medicine for a period of over 1,500 years, nevertheless asserted the importance of anatomy—though unfortunately he only knew anatomy through the dissection of animals and not of the human subject; and he was the parent of experimental physiology. Towards the middle of the seventeenth century, Descartes made great use of vivisection, and the recluses of Port Royal—some of the most learned philosophers and educationists of their time—resorted to dissection of living dogs and other animals to demonstrate the circulation of the blood, and were accused, probably as unjustifiably as the scientists of to-day, of being indifferent to the cries of their victims.

Sir Henry Morris then sketched the progress of experimental science through the seventeenth, eighteenth, and nineteenth centuries up to our own time. He went on to say that in the past one of the great obstacles to the advance of medicine was the tenacity of unproven hypothesis. By experimental methods of research the truth or falsity of hypotheses was tested, in many instances very quickly, before they were either accepted as explanations of symptoms, or put into practice in treatment. The wards and the *post-mortem* theatre also yielded products not a few and by no means unimportant or insignificant. The importance of developing the faculty of observing could not be exaggerated. At all times and in all places it could be exercised; whereas experimental research required special and often elaborate conditions and equipment.

The enormous strides made by scientific researches afforded reason to expect that the so-called systems of medicine associated with the names of Hoffmann, Brown, Cullen, and others, each of which was based upon the idea of finding an explanation for every form of disease, had vanished for all time. At the present time, however, quackery was rife in Germany in the form of the "Natural" treatment (*Naturheilkunde*), and in this country

and America in the form of Christian Science. The profession was much indebted to Mr. Stephen Paget for his instructive book and his recent addresses on Christian Science; but there was one aspect which he had not gone into, and it was to this aspect that he wished to call attention. The teaching and practice of Christian Science ignored all the physical reality of sickness, set aside all the recognized means of curative science, and relied entirely on an appeal to "*the source of life, for more life.*" Its method was to call on the Divine Spirit by means of concentrated thinking, and by thus drawing upon "Spiritual force" to remove an *idea of disease*—the disease itself being said to have no actual or real existence. In theory Christian Science healing differed from Faith healing in this: Faith healers did not doubt the reality of disease and suffering, but believed that the Spiritual and Divine force neutralized and counteracted them; whereas the Christian Scientists denied entirely the existence of a body, or of pain and sickness, and professed to call down the Divine influence to overcome a false idea—a misimpression. Like the saints of old, Mrs. Eddy and her followers claimed the true source of their cures to be the direct action of God. Such a claim, if not put forward in so many words, was *de facto* a claim to be able to work miracles. A miracle was defined as a plain and manifest exercise by the agency of man (including prayer and contemplation under the term agency), or by God at the call of man, of those powers which belonged only to the Creator and Lord of Nature.

The Christian Scientist could not get away from the fact that, on his own showing, he thus attempted to work miracles. But there was no difficulty in showing that Christian Science departs in four important particulars from the miracle working described in the New Testament.

The miracles of which there were authentic records were (1) those of the New Testament, (2) those of the Old Testament, and (3) the miracles of the early Christian Church. The miracles attributed to the Roman Emperor, Vespasian, were no doubt pure fabrications, and Mahomet's miracles read like sleight of hand and jugglery. The miracles of the New Testament were performed (*a*) by Christ himself, (*b*) by the Apostles, (*c*) by the Disciples.

The points of difference to which he referred were that the Christian Scientist (1) required faith or self-confidence in the patient; (2) attributed, therefore, insufficient importance to the faith or "mental concentration" of the healer himself or herself; (3) refused to employ any physical means of treatment; and (4) was unable to perform certain acts which, they were explicitly told, could be done by those who worked miracles under the Christian dispensation.

Many of the New Testament miracles were those of *healing*. The woman cured of an issue of blood, the leper cleansed of his leprosy, and the blind men restored to sight by mere touch, were performed by Christ himself on persons who were told their faith had made them whole. The widow's son, Jairus's daughter, and the son of "one of the multitude" seen after the Transfiguration were wrought by Christ through the faith of the parents of the afflicted. The centurion's servant was cured of the palsy through the faith of the centurion, which was said to have been greater than any which had been found even in Israel.

With regard to the first of the points of difference he had pointed out, Sir Henry Morris said that in neither of these four last-named cases was there any co-operation on the part of the individuals restored to health. In the performance of the miracles wrought upon them they were purely passive agents. Christian Science, on the other hand, required an effort of contemplation or mental concentration, of will power, or of faith on the part of the patient to be cured. It could not, however, appeal to the New Testament for support of this teaching, for, besides the instances of the substitution of the faith of another for that of the person who was the subject of the miracle, there were many others in which there was no such substitution. Neither the man blind from his birth, nor the nine lepers, nor the man with the legion of devils, were stated to have exhibited faith by prayer, or otherwise, before or during the accomplishment of the miracle. Nor did any other person do so on their behalf. In the case of the cripple of Lystra, St. Paul, "steadfastly beholding him and perceiving that he had faith to be healed," cured him. The cripple had heard Paul speak, but he had made no appeal or sign or personal effort to be healed. St. Peter healed the lame man at the gate of the Temple, cured Æneas of Lydda of the palsy, and restored Dorcas, alias Tabitha of Joppa, to life; but there was no co-operation on the part of those treated. The miracles of Philip and Stephen testified apparently to the same fact, for being "full of faith and power" themselves, they "did great wonders and miracles among the people."

Thus, though Christian Scientists were able to refer in support of their own method of "absent treatment" to the single instance of the centurion's servant, there were many cases recorded in which there was no co-operation or participation in thought concentration on the part of the patients themselves. Was it not, therefore, effrontery on their part to ascribe their failures to the patients' defective capability of thinking, or deficient force of will, or want of faith?

With regard to the second point of difference, he said that in the cures which were wrought by the Apostles and Disciples, the faith of the active agent (that is, the Apostle or Disciple) was an essential factor for the healing. When an explanation was sought of the failure of the Disciples to cure the epileptic and lunatic boy, the reply was, their unbelief. On the other hand, the seventy Disciples who were sent, two and two, into every city and place, were believers. They returned from their journeyings with joy, proclaiming: "Even the devils are subject unto us through Thy name." Further, there was the reply to the Apostles about the grain of mustard seed and the sycamore tree, when they asked, "Increase our faith." Was not the correct argument from analogy, therefore, that when the Christian Scientists failed it was on account of their own unbelief—of their own lack of power?

Speaking of the third point of difference, Sir Henry Morris said the Christian Scientists could not justify by New Testament teaching their own rejection of every kind of physical aid in their treatment of the sick. In the case of the man blind from his birth, Christ made clay with his spittle, and after anointing the eyes of the blind man with the clay, sent him to wash in the pool of Siloam. Repeated stress was, in the narrative, laid on the clay and the washing. Again, they were told, "God wrought special miracles by the hand of Paul, so that from his body were brought unto the sick handkerchiefs or aprons, and the diseases departed from them, and the evil spirits went out of them."

With reference to the fourth point, Sir Henry Morris said that it had been held that the power of working miracles was transmitted to the Apostles and Disciples in such a manner that it came necessarily to an end on the death of the last of the Apostles. If they disputed this, were the Christian Scientists prepared to base their self-confidence as healers on the only passage in the Bible which it was said gave any support to the idea that miracles were in these days performed, and had been possible throughout all the ages of the Christian Church? The passage was: "And these signs shall follow them that believe. In My name shall they cast out devils; they shall speak with new tongues; they shall take up serpents; and if they drink any deadly thing it shall not hurt them; and they shall lay hands on the sick, and they shall recover."[1]

If the laying-on of hands was part of the healing, how did the Christian Scientists justify their attempts on patients at a distance? And why did they restrict themselves to the exercise of the healing power only, and disregard all the other endowments specified in the text? Did they speak with new tongues? Could they take up serpents or drink deadly things and yet remain unharmed? Would they take, say, concentrated laurel water instead of claret for dinner, or eat aconite root instead of horseradish with roast beef? Why did they not give demonstrations in their churches or temples of the impunity with which they could manipulate venomous snakes and serpents?

When St. Paul, after escaping drowning from shipwreck, was being kindly entertained by the inhabitants of Malta, a viper came out of a bundle of sticks and clung to his hand. The people at once supposed he was a murderer, and that vengeance had overtaken him in spite of his escape from the sea. But when he shook the beast off into the fire and suffered no harm the people changed their minds and thought he was a god. Why did not the Christian Scientists increase the evidences of their power,

[1] Mark, xvi, 17, 18.

and improve the estimation in which they were held, by showing in the manner of St. Paul how unmerited were the imputations of manslaughter against them?

It was foretold that sorcerers and false prophets would arise who would declare signs and wonders, insomuch that if it were possible they would deceive the very elect. Was Christian Science included in this anticipation?

When in 56 A.D. the seven sons of Sceva, the Jew of Ephesus, and other "vagabond Jews and exorcists" made trial of their power of healing, the evil spirit answered them by saying, "Jesus I know, and Paul I know, but who are ye?" And then the man in whom the evil spirit was, leaped on Sceva's sons and overcame them, and prevailed against them so that "they fled out of the house naked and wounded." There were not a few persons who, knowing the fatal consequences attending the practice of the Christian Scientists, would witness without disturbance to their bowels of compassion the advent of a spirit which would chastise those presumptuous persons as Sceva's sons were treated.

The Pharaoh of 2,300 years ago called together the wise men, the sorcerers and the magicians of Egypt, to practise their enchantments and to cast down every man his rod, and they became serpents. But the rod of Aaron swallowed up the rods of all of them. Would it be altogether a misfortune if modern science or public spirit, or both, like Aaron's rod, would swallow up all the disciples of Mrs. Eddy?

It was commanded in old time to forbid no man to do miracles in the name of the Master, nor would they quarrel with the Christian Scientists for trying their minds on miracles if they did no harm to others thereby. The repugnance of their presumption was because they misled the credulous, the ignorant, and the helpless into supposing that miracles would be wrought at their instigation, and thereby persuade, if they did not indeed enforce, their victims to neglect every physical means for their recovery. They were not concerned as medical men with the metaphysics of Christian Science. What they resented was the effect of their teaching and practice in cases of organic and infective diseases, and in severe surgical injuries. It was because of their meddling with medicine, not their muddling with metaphysics, that the profession, in the interest of the sufferers and in the interest also of the general public, opposed their false doctrine and cried out against their cruel and fatal practice.

The miracles of the Old Testament formed part of the Theocratic government of the Jews, and were wrought for the purpose of impressing an ignorant and semi-barbarous people with the idea of the power of the Deity. To us the striking feature about many of them was the thinness of their veil of the marvellous. As miracles they seemed beggared of the miraculous. They were, however, quite sufficient to terrify and excite the wonder of a semi-civilized race whose simple rudiments of learning made them as "children" in the condition of "slaves." For instance, Samuel called to the Deity for thunder and rain during wheat harvest so that the people might realize their wickedness; and the thunder and the rain came. This, Sir Henry Morris said, brought back to his thoughts a circumstance related in *She* or some other book by Rider Haggard. Some one, knowing that an eclipse of the sun was due on a particular date, saved himself from being put to death by publicly proclaiming its advent, and thus leading the natives to fear him as a god or a prophet. There were many nowadays who foretold, like Samuel, what the weather was going to be; such predictions were a part of the news supplied by the daily and weekly press. Besides, prayers were still offered in churches for sunshine or showers, and sometimes the rain or the fine weather, as the case might be, came as a *post hoc* if not as a *propter hoc*.

Then there was the cure of King Hezekiah, who was sick unto death "from the effects of a boil," but whose life was saved by his own tears and prayers and through Isaiah, who prescribed "a lump of figs" to be applied to the boil. No one in these days, however, would think it wonderful that a fig poultice should bring away the core of a ripe boil in three days.

There was little to venerate or respect in the miracles of the saints of the second, third, and fourth centuries. The miracle associated with the career of St. Ambrose in the fourth century looked like imposture. At a time when his influence was on the wane and required vigorous support St. Ambrose had a dream, which led to finding beneath the pavement of the church the remains of two martyrs. The common people crowded to see these venerable relics, and many who were sick were healed by touching the bones. St. Ambrose was in ecstasies over these miraculous cures, and preached eloquent sermons thereon. This was but a poor and vulgar imitation of the miracle of the man who, when about to be buried, was thrown into the sepulchre of Elisha, and came to life immediately his body touched the bones of the prophet.

The tactics of St. Ambrose reminded them of the miraculous cures which were worked on the fanatics at the tomb of the Jansenist Deacon, François de Pâris, in 1730; they also recalled the procession of the multitudes one had seen at Lourdes, and the filthy fragments of dressing, and the discarded sticks and crutches ostentatiously thrown into the hedgerows near the shrine of miraculous cures in the South of Ireland.

All the ecclesiastical miracles were highly improbable. They resembled fictitious legends invented by the imagination of impostors for acceptance by the credulous.

After speaking of a number of other superstitions, Sir Henry Morris said that, though the struggle between theology and science was probably over, and plague and pestilence, as well as earthquakes and famine, were now universally admitted to be the natural effects of other antecedent material events, research by experiment was at the present time being hotly resisted by a band of no doubt well-meaning persons, whose intentions were good, but whose methods were tortuous. This band having, by way of exciting prejudice, stigmatized experiments on animals with the name of vivisection—as though all instead of a mere fraction of a unit per cent. of them were cutting experiments—had, under the assumed banner of humanity, moved a great charitable fund for the benefit of the sick poor to exclude from its bounty any direct or indirect assistance to medical education or research; and had been the cause of the appointment of a Royal Commission on Vivisection, whose report they were at this moment eagerly awaiting, though without fear or misgiving as to the result.

One of the results of "looking back" was that they realized how phases of opinion and cycles of thought, as well as epidemics of disease, were prone to recur. It was possible for the oldest amongst them to recall periods at which mesmerism, hypotism, thought-reading, table-turning, and faith-healing had been temporarily in vogue, and then had passed away again out of favour or notice. Just now there was a phase of opinion—entertained, too, by some few honourable and distinguished men—that there was scope and reason for the exercise of "suggestion" as a remedial and curative agent; and it had been seriously put forward that the already vastly overburdened medical curriculum should be still further charged by the addition of "a sound psychological training," so that every medical practitioner should be able to employ "mental therapeutics" and to engage in "the scientific practice of suggestion."

Surely it behoved the leaders of medical thought and opinion to walk most warily in this direction. A committee to make a careful scientific investigation of the nature and subsequent history of the cases asserted to have been cured by Christian Science, by hypnotism, and at Lourdes might make a valuable contribution as to the questions involved; but he thought it would be highly undesirable to combine the practice of "suggestion" with the ordinary practice of the profession. Such a course seemed to offer encouragement to those outside the profession to make arrogant pretensions to curative powers; and might possibly lead to unfounded accusations and regrettable indiscretions even within the profession itself, especially if the character of the cases which were regarded as proper subjects for this treatment was remembered. Even if it should come to be decided that a set of persons should be properly trained to practise treatment by suggestion, he was not quite sure that the doctor should have more to do with the treatment than merely to examine and pronounce whether the case was suitable for its employment.

Sir Henry Morris concluded by repeating that all actions involved belief, and all successful action true belief, and that to arrive at true belief in medicine they must go through scientific scepticism to knowledge, through doubt to certainty, and replace empiricism by experiment and superstition by research.

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SATURDAY, NOVEMBER 27TH, 1909.

THE GENERAL MEDICAL COUNCIL.

THE ninetieth session of the General Medical Council was opened on Tuesday last by an address from the President, Sir Donald MacAlister, which is reproduced in full in the SUPPLEMENT. It is difficult to forecast with any certainty the number of days over which this session will extend, but the programme does not seem very heavy.

It is the custom to deal with as many of the disciplinary cases brought to the notice of the Council as possible at the autumn session, and on the present occasion some such cases will be heard which have been sent up to the Council after preliminary examination by the Penal Cases Committee, which acts as a sort of grand jury, deciding whether there is or is not a *primâ facie* case for investigation. Suggestions have been made that it might be possible to shorten the time and diminish the expense attendant upon the hearing of these cases by delegating at least some part of the hearing to a body smaller than the whole Council, as is now done under statutory authority in dental cases. The Executive Committee has had this matter under consideration, but, as somewhat difficult legal questions arise in connexion with it, the question is not ripe for discussion. In dental cases the facts are ascertained by the Dental Committee, and the whole Council is only asked to decide upon the gravity of the facts found. Although it is sometimes a little difficult to judge of the gravity of the facts found without hearing all of the evidence, yet as this evidence is placed in print before every member of the Council, a great saving of time is effected, for the whole Council is relieved of the task of determining whether the facts alleged in the charge have been proved. The suggestion is that some similar course might be possible in medical cases, and the President expressed a hope that some such means might be discovered. But whereas the Dentists Act expressly prescribes this course, the Medical Acts do not, although they do not expressly forbid it, and herein lies the difficulty.

The discussion of two reports of the Education Committee — that presented a year ago, and the supplementary report on various proposals submitted to the committee referring to the curriculum in medicine presented in May—was commenced on Tuesday. The debate will be continued, and is likely to be prolonged, as it is understood that many members of the Council desire to speak on it. Owing to these circumstances we are unable to give a complete note of the debate in this issue, but it may be pointed out that the main recommendations of the Committee's report were, first, that the subjects of the curriculum should be arranged in two groups, the earlier group comprising the preliminary sciences and anatomy and physiology, and the later group embracing all the remaining subjects, exclusive of pharmacy; and secondly, that whatever time might be spent upon the earlier subjects, a period of two full academic years must be wholly devoted to the subjects of the final examination, and that another six months must be spent on these subjects, but that these months might form part of a year divided between the subjects of the two groups.

Dr. Mackay, the Chairman of the Education Committee, in moving the adoption of its recommendation, spoke of the plan as introducing a block to prevent the student from passing to the later subjects until the earlier had been completed. The alternative was to extend the curriculum to six years; and Dr. Mackay brought forward evidence to show that all the subjects of the medical curriculum could be taught within five years, leaving the fifth year, a period judged to be sufficiently long for the purpose, entirely for clinical work. Even after Dr. Mackay's explanation the exact effect of the recommendations was not entirely clear, and the text was afterwards modified; it is thought probable that the Council will adopt a resolution recommending simply that two and a half years must be given to the study of the final subjects, and that not less than two years should elapse between the date at which the student passes the examination in anatomy and physiology and that at which he presents himself for the final examination in medicine, surgery, and midwifery.

The President, in his address, referred to the changes which have taken place among the members of the Council. Dr. Dixon Mann, Professor of Forensic Medicine and Toxicology in the Victoria University of Manchester, who has succeeded Professor Young as the representative of that body, is the only actually new member, although Sir Christopher Nixon, who previously represented the Royal University of Ireland, appears in a new guise as representative of the new National University of Ireland. The President added that the number of the Council was likely soon to be further increased by the nomination of representatives of the Universities of Belfast and Bristol. The President took occasion to refer to the death of Sir William Thomson, a former member of the Council as the direct representative of Ireland and paid a graceful tribute to his manifold services to the profession and the State, observing that those who had been fellow members with him would long cherish the memory of his impressive bearing and helpful interest in the Council's work. The President paid a tribute also to the memory of Mr. S. G. Lushington, for five years legal adviser to the Council, who sank under a severe operation in the prime of life. Some of the penal cases heard recently have called for the exercise of tact, patience, and firmness in an unusual degree, qualities which Mr. Lushington displayed on every occasion. The practice of the Council has not been to make any formal appointment of a legal adviser but to instruct counsel from time to time, although in the case of Mr. Lushington and his predecessor, Mr. Muir Mackenzie, the instruction was repeated on each consecutive occasion. For the present session Mr. Bodkin, who has sometimes appeared before the Council in the different capacity of advocate, has been instructed to act as judicial assessor, and took up those duties on the first day of the session. Mr. Bodkin is not only a well-known lawyer, but also holds a public appointment somewhat similar to those held by Mr. Muir Mackenzie and by Mr. Lushington.

A fresh complication has, it appears, arisen with regard to reciprocity with Canada; it was hoped that the difficulty, due to the fact that the several provinces of the Dominion have not been able

to agree upon a common qualification, had been met by dealing separately with each, and reciprocity has actually been concluded with Nova Scotia and Quebec, while a similar proposition has been received from the province of Prince Edward's Island. It appears, however, that the provincial legislature of Quebec has recently made an alteration in the law which may adversely affect some of the qualifications recognized for registration in this country. The attention of the Lord President of the Council has been called to the matter, and inasmuch as the Privy Council is directly concerned in arranging reciprocity, it appears to lie with that body rather than with the Medical Council to take action in the matter.

As there is no hope that any progress with the Anaesthetics Bill can be made during this present session of Parliament, no action has been taken regarding it. The President has, however, given evidence before the Coroner's Committee of the Home Office, to which the bill had been referred for report. It is probable that, in compliance with a request from that Committee, the opinion of the Council may be given upon some of the points involved, and that if such an opinion is pronounced it will be communicated to the Coroner's Committee.

GREEK MEDICINE IN ROME.

THERE are many signs of the increasing interest that is now taken in the history of medicine. In proof of this we need only point to the foundation of chairs from which this subject is taught in several universities, and to the formation of societies for its study which have been founded in various conntries; and the medical journals both here and abroad bear witness to the same fact. The lectures founded by the late Dr. FitzPatrick at the Royal College of Physicians of London are another step in this direction. So far the College has been particularly happy in the choice of lecturers. Dr. Payne, in his *English Medicine in Anglo-Saxon Times*, and his *Gilbertus Anglicus* and *Ricardus Anglicus*, and Dr. Norman Moore in his *History of Medicine in the British Isles*, have made valuable additions to our knowledge of the subjects with which they respectively dealt. In the lectures recently delivered by Sir Clifford Allbutt, one of which was published in the JOURNAL of last week, while the other appears in the present issue, the Regius Professor of Physic in the University of Cambridge goes farther back, and treats of the introduction of medical art into ancient Rome. The subject is a fascinating one in itself to those interested in the history of medicine, and Sir Clifford Allbutt treats it in a most attractive manner. His lectures show wide and accurate scholarship without a tinge of pedantry; everywhere his learning is "informed," as the scholastics would have said, with the special knowledge of the physician and the practical wisdom of the man of the world. Perhaps there is no drearier reading than the exposition of ancient medical theories as given by most medical historians. By his sympathetic insight into the working of the human mind, however, Sir Clifford Allbutt makes even the dry bones of obsolete and fantastic theories live again and become intelligible; and he sets them forth with the grace of a literary style in which lucidity, combined with a *curiosa felicitas* of expression and illustration, makes the reading of the Lectures a "feast of nectared sweets" to those who take an interest in the evolution of the medical profession.

Sir Clifford Allbutt gives a masterly sketch of the mental temper of the ancient Romans before they were touched by the influence of Greek thought. He describes them as "a people entrenched . . . in a folk-"lore and a folk medicine of their own, and worship-"ping a mob of pallid deities each, as elsewhere so "also in medicine, personating rather than creating "not only every chief system and function of the "body, but every stage of each. For each stage of "labour there was its peculiar deity." Every part of the body, each limb, and even the "harmless, un-"necessary navel has its divine warden." Even the itch had a goddess peculiar to itself. There was, of course, among so warlike a people a rough surgery; arrows were extracted and wounds treated. There was a law, said to date from the time of Numa, that if a pregnant woman died the child was to be extracted by any one who happened to be near. But it is evident that such operations—like hanging, which lies within the sphere of a modern sheriff—would necessarily tend to be relegated more and more to persons who had acquired some knowledge and dexterity by practice. To the head of each family fell the duty of treating his wife, his children, and his slaves in illness, and in this way there naturally grew up a folk medicine akin to that of our own ancestors, who handed recipes on to each other and treasured them for their descendants, as may be seen in the Paston and Verney letters and many similar records. Of this household medicine, as it existed in old Rome, we have an example in the treatise *De Re Rustica* of the elder Cato. His favourite remedy was the cabbage, which was doubtless often useful as an antiscorbutic, but which, to the *atrox animus* of the old Roman, was precious as enabling a man who dined out to eat and drink his fill without suffering any unpleasant consequences. The homely vegetable also cured constipation and dysentery, headache and kidney disease, strangury, pain in the liver, heart disease, colic, sleeplessness, gout, and consumption. As an external application, too, it was a panacea; it cured cancer, ulcers, gangrene, polypus, deafness, fractures, and dislocations. In fact, he says, *est ad omnes res salubre*. There is no quack medicine of the present day for which so wide a range of healing power is claimed as Cato attributed to cabbage. It seems, however, to have failed sometimes in reducing dislocations and healing fractures. Then recourse was had to a primitive form of mental healing. A green reed was broken in the middle, each part being held by a man in contact with the injured limb; meanwhile the patient sang the following words, *Daries, dardaries, astataries, Dissunapiter*, till the pieces of the reed united; these were then made into a ligature and applied to the limb. This cured the mischief, but every day for some time after the patient had to repeat the incantation already quoted or the following: *huat, hanat huat ista pista sista, domiabo damnaustra;* or *huat, haut haut ista sis tar sis ardannabon dunnaustra*. Whether these are remnants of Etruscan, as Sir Clifford Allbutt conjectures, or whether they are meaningless charms like many of those which were in common use in the Middle Ages, we do not know; but they are as intelligible as the revelations of Mrs. Eddy, and doubtless would have as much efficacy on a patient in the suitable frame of mind as the "treatments" of Christian Science.

Into this atmosphere of folk medicine, which was largely religion, Greek medicine was brought to Rome by Archagathos of Sparta about 219 B.C. He was welcomed by the citizens, who gave him the designation of *Vulnerarius*, and by the Senate, which gave

him a surgery and the citizenship of Rome. He seems to have had a salary from the State. But whether from the jealousy of the conservative section of the Roman public, or from the fatal effects of his surgery, or from the fact charged against him that he exacted fees for his services, his title of *Vulnerarius* was in time exchanged for the less flattering nickname of *Carnifex*.

Pliny, who, perhaps because he was a collector of old wives' cures hated medical art, says that the Romans had continued to do without doctors for six years. Sir Clifford Allbutt produces evidence to show that this statement is false. But it is true that the sterner spirits among the Romans such as Cato, who hated Greek philosophy, included medicine in their dislike. This appears clearly from what he wrote to his son; we quote the translation of Philemon Holland:

> "Concerning these greckes (sonne Marcus) I "will write in place and time conuenient, what "I have found out and knowne by them in Athens: "and namely, that it were good to looke into their "books, and reade them (as it were) by the way, "but in no wise to study upon them much and "learn them thoroughly. I have already giuen "the attempt, and intend to conuince and put "downe the wickedest race and most peruerse and "obstinat kind of them. And learne this of mee, "as from the mouth of a true Prophet, That "whensoeuer this greekish Nation shall bring "into Rome their Philosophie, they will corrupt "and marre all: but let them send once their "Physitians hither, you shall see a greater "wrecke and confusion thereby. For I assure "thee, they have complotted and sworne one to "another for to murder all Barbarians by means "of their Physicke. And euen to effect and bring "this about they will be fed also and take money; "to the end, that both we should trust them the "rather, and they also haue the better meanes to "worke the feat and dispatch folke with more "facility. As for vs, it pleaseth them vsually to "name us Barbarians; yea, and they giue vnto vs "more filthy termes than any others, and mis-call "vs Opiques. Well, remember thou once for all, "that I have giuen thee warning of their "Physitians, and forbidden thee to be acquainted "with them."

Cato foresaw that the introduction of Greek thought would undermine the Republic, as Tacitus and other later observers foresaw that Christianity would sap the foundations of the Empire. He may also have had something of the disbelief in rational medicine which so often goes with a certain kind of hardheadedness. But the Greeks prevailed, and more than a century before Christ we find the famous physician Asclepiades accepted as the leader of a recognized profession, and the honoured friend of Cicero, Atticus, and Mark Antony.

The character of Asclepiades has suffered from the calumnies of Pliny who lived after his day, and from the criticisms of Galen and others, including Greenhill and other modern historians of medicine, who were angry with him for daring to criticize Hippocrates. Sir Clifford Allbutt devotes a considerable part of his second lecture to a vindication of Asclepiades, whom he compares to Boerhaave He was the prototype of the successful physician of modern times—a man uniting charm of manner and general culture with clinical insight and a sound knowledge of the medical art as it was in his day. He was called a charlatan for no better reason than that he substituted for the coarse and drastic remedies which he found in use gentler means, such as regimen, baths, diet, and exercise. It is probable that in his therapeutic system he took the psychic factor into account, for it is known that he had made experimental researches and observations on diseases of the brain.

Space will not allow us to follow Sir Clifford Allbutt through the rest of his lectures; we can only say that they form a most valuable addition to the history of medicine. No thoughtful reader, however practical-minded he may be, can fail to derive instruction, as well as enjoyment, from their perusal.

THE HOUSING AND TOWN PLANNING BILL.

THE long struggle over this bill is now drawing to a close, and the debate in the House of Lords, which we summarize elsewhere (p. 1571), shows how the two Houses of Parliament have at last settled their differences, and reached after many conferences a satisfactory solution. Mr. Burns is to be heartily congratulated on the skill and patience with which he has conducted the necessary negotiations, and his reward will be found in the satisfaction he will have in placing so useful a measure on the Statute Book.

When the Lords amended the bill they introduced vital changes as regards the acquisition of lands both for housing and town-planning, and they cut down the large powers proposed to be given to the Local Government Board as the supreme housing authority. The compulsory acquisition of land is always a difficult subject, and the Upper Chamber wished to substitute for the simple, speedy, and inexpensive method in the bill, which was that devised for and enacted in the Small Holdings Act, the more cumbrous and costly method adopted in the Port of London Act. Mr. Burns has succeeded in restoring to the bill the Small Holdings Act methods; but as regards housing in London or a borough or urban district land can only be taken compulsorily after an inquiry by an impartial person as to the suitability of the land and the general amenities connected with it. This inquiry, if it goes against the scheme of the Local Government Board, will compel those seeking to take the land to obtain Parliamentary sanction in the usual way. As such cases will be few in number, the concession was wisely made, and we believe that a great impulse will be given to rural housing and housing in most urban districts by the inexpensive and speedy method of acquiring land which will be available in the great majority of cases. All Housing Acts in the past have failed on account of the expense, and delay, and difficulty in obtaining land, and the new Act will remedy this cardinal defect. The appointment of the impartial person, who is to have all the powers of a Local Government Board inspector, although not in the employ of any Government department, is of course a diminution of the great power originally asked for by Mr. Burns; but it will be found, we have no doubt, to work well, and not add very greatly to the time and cost of the procedure. The Lords, most probably in recognition of this concession, gave up their demand to have housing questions settled by appeal to the county court. To have introduced this change into the bill would have crippled its usefulness and led, most probably, to great variations in practice in different localities. In public health

administration uniformity of practice is essential to success, and it is for this reason that a strong central directing authority, equipped with full scientific knowledge and armed with all necessary administrative powers, is necessary for progress.

The definition of a landlord as a person letting a house to a tenant for his own habitation was amended by leaving out the words "his own." We are still somewhat doubtful as to how this definition will work. The bill would have been better without it, as the Commons thought, for there may under this definition grow up some device by which a middle man may be developed in the housing business, who may be used to protect the real owner from the fulfilment of the obligations necessary for decent and healthy housing. The definition of the working classes which the Lords had introduced and which the Commons could not agree with, has by consent disappeared. This is an advantage, as the object of the measure is to secure healthy housing, and it would be a mistake to limit the action of a local authority by too strict a rule as to the persons to be housed. In the interest of the public at large the wholesomeness of the home should be the first consideration.

As regards town planning, the bill is practically restored to the original form sanctioned by the Commons, with the addition that before a town planning scheme is finally approved by the Local Government Board, notice shall be published in the *Gazette*, and in case of objection made by a responsible person or authority, the draft of the Order will have to be laid before each House of Parliament, so that if an address is presented to the Crown by either Lords or Commons against the scheme it may be stopped. The arrangement about the division of any increase in value of land caused by a scheme between the owner and the local authority equally, seems to us a fair compromise.

On those points which specially appeal to the medical profession as promoting efficiency in the health service, the two Houses have come to a satisfactory agreement. The duties of the county medical officer will be prescribed by the Local Government Board by a general order of that Board, and this order will be laid before Parliament, but the county council will be able to assign such other duties to him as it thinks fit. The information which the county medical officer can reasonably require from a district medical officer will be regulated by the prescribed duties. Lastly, the Security of Tenure subsection, which enacts that a county medical officer of health shall be removable by the county council with the consent of the Local Government Board, and not otherwise, is restored to the bill by the common consent of the two Houses. This is an important victory, won for the profession after a struggle. It sanctions a principle which we believe might with advantage be extended to all sanitary officers in the interests of efficient health administration.

HOSPITAL ABUSE IN SCOTLAND.

THAT hospital abuse exists to a large extent in London and some of the larger towns in England is well known, and that it has crept into Scotland is made manifest by the evidence contained in the Report of the Commissioners on the Poor Laws and Relief of Distress, extracts from which are published on page 1540. That spirit of independence which has been supposed for centuries to be a special gift of the Scottish people seems to be in a fair way of being weakened. The majority of the Commissioners find that people now look to the State to provide for their old parents, while their children are being pauperized by State intervention, providing free education and free feeding, not to mention medical inspection, with its far-reaching consequences in regard to the question of treatment of those pronounced defective. The Commissioners, in discussing the causes of this want of independence in the Scottish people, draw attention to the abuse of outdoor medical charities in large towns by persons well able to pay for treatment, and deplore the want of provident dispensaries or a public medical service on a provident basis; these organizations, in their opinion, have many advantages, providing for members and their families a form of insurance for medical aid by payment of a weekly sum, but at a cheaper rate than if they went to a private practitioner. But even if it be admitted for the sake of argument that the establishment of organizations of the kind might encourage providence amongst the working classes in large towns, we are entitled to ask how their extension to small towns will affect the already too small fees of the general practitioner. A remedy against hospital abuse, and, what is much more likely to happen, the sweating of medical men, is urgently needed. It is a question full of difficulties, and if there ever was a time when it is absolutely necessary for medical men to stand shoulder to shoulder it is the present. The British Medical Association is doing much, and can do more, for the welfare of the profession, but unless all members of the profession will join its ranks and unite in combating abuses which are daily growing up around them the work of committees and individuals will avail little. Unanimity and cohesion must be our watchwords.

THE ASYLUM OFFICERS' SUPERANNUATION BILL.

THE Lords' amendments to this Bill, which covered ten pages, were considered by the Commons late on Wednesday night. The task looked formidable, but the House was in good humour, and as the amendments extended the usefulness of the measure, they were favourably received. After the first three amendments, which were directed to classifying the officers and servants, and altering the period of service from fifteen to twenty years, and the qualifying ages from 50 to 55 had been accepted on the motion of Sir W. Collins, a difficulty arose on the question of privilege. The Lords had added "incapacity" as a qualification for receiving an allowance during its continuance. The Speaker pointed out that this involved extra charges, and that about one-third of the subsequent amendments were barred by the same fact, unless the House chose to waive its rights. The House agreed to do so, and then all went merrily and rapidly. The amendments were accepted without debate or question and the safety of the measure in its extended form assured. The bill soon to become an Act will prove a great boon to a deserving class of officials, who by the arduous and perilous nature of their work deserve consideration, and who will now be placed in a position more in harmony with the grave responsibilities which they undertake in the daily discharge of duty. Sir William Collins has conducted this measure with great tact and skill, and is to be congratulated on placing so useful a measure on the Statute Book.

THE BRITISH NATURAL HISTORY MUSEUM.

WE are glad to see that the question of the administration of the British Natural History Museum at South Kensington has been raised again. Perhaps

every one is not aware of the anomalous state of things which subjects the Director of this museum to the authority of the Principal Librarian of the British Museum at Bloomsbury. Successive occupiers of this latter position, whatever their eminence in literature and archaeology, cannot profess to possess any knowledge of the conditions necessary for the efficient management of a natural history collection, and it is suggested that the recent appointment of a new Principal Librarian and of a new Director of the Natural History Museum affords an opportunity for making these two officials independent in the discharge of their respective duties under the trustees of the British Museum, thus giving to the Natural History Museum complete autonomy and direct responsibility to those trustees. Mr. Adam Sedgwick, F.R.S., Professor of Zoology in the University of Cambridge, has stated that if this suggestion were adopted it would largely meet the views of the zoologists who memorialized the Prime Minister in 1907, and who were received by him in deputation in 1908. From a letter published in the *Times* by Sir Ray Lankester, until recently Director of the Natural History Museum, it would seem that the curious state of things which now exists came about more or less by accident. It appears that when Sir William Flower was appointed the first Director of the Natural History Museum, the then Principal Librarian, Sir Edward Bond, proposed to the trustees that the new Director should be an independent accounting officer, and have no relation with Bloomsbury except in so far as the trustees are the trustees of both institutions. It seems that though Sir William Flower did not desire this complete independence, yet as a matter of fact in all respects save formal passage of his accounts through the accountant's office at Bloomsbury, he was made free from any interference or participation in the discharge of his functions by the Principal Librarian. Shortly after Sir Ray Lankester was appointed Director in 1898 the trustees gave to the then Principal Librarian, Sir E. Maunde Thompson, the title and authority of Director of both museums, and obtained for him an increase in his salary from £1,200 to £1,500 a year. Since then the Director of the Natural History Department has never been allowed to meet the trustees except in the presence of the Principal Librarian. The new arrangement, as was to be expected, proved injurious to the work and progressive activity of the Natural History Museum, and, in view of the increasing importance of parasitology and entomology to medical science, we feel justified in calling attention to the matter, and in endorsing the opinion that if the trustees of the British Museum do not seek spontaneously to revise their regulations it will be necessary to apply to Parliament for legislation removing the Natural History Museum altogether from their trusteeship and placing it under the control of a new body of trustees consisting of persons possessing capacity for a responsibility of this nature. It will also, we fully agree, be necessary that there shall be a full assignment of authority and reasonable tenure of office to the men of science who are the real makers, guardians, and utilizers in the national interest of the Natural History Museum, who order its contents, who assist students, and who are the only advisers of all those departments of the Government which desire efficiency, and this, we may presume, includes, in theory at least, every department.

AN OUTSIDE VIEW OF THE DOCTOR.

In a recent number of the *Manchester Guardian* Mr. G. W. E. Russell, author of that delightful miscellany, *Collections and Recollections*, discourses on doctors. Lacking any other title to fame, he says, he has been heard to boast that he knows by personal experience more about doctors and doctoring than any other man of his age in England. He tells us that he is in his own person a monument of medical practice, and has not only seen, but felt, the rise and fall of several systems of medicine and surgery. Broadly speaking, he says, the doctors of the Fifties and Sixties were as Dickens drew them. "The famous "consultant, Dr. Parker Peps; the fashionable phy- "sician, Sir Tumley Snuffim; the general practitioner, "Mr. Pilkins; and the medical officer of the Anglo- "Bengalee Disinterested Loan and Life Insurance "Company, Dr. Jobling, were in the highest degree "representative and typical; but perhaps the doctor— "his name, unfortunately, has perished—who was "called to the bedside of Little Nell, and came with "'a great bunch of seals dangling below a waistcoat of "'ribbed black satin,' is the most carefully finished "portrait. Such, exactly were the family physicians "of my youth. They always dressed in shiny black— "trousers, neckcloth, and all; they were invariably "bald, and had shaved upper lips and chins, and care- "fully-trimmed whiskers. They said 'Hah!' and "'Hum!' in tones of omniscience which would have "converted a Christian Scientist; and, when feeling "one's pulse, they produced the largest and most "audibly-ticking gold watches conceivable by the "horologist's art." The doctors, of the Fifties and Sixties, we are told, had "the courtly manners of the "old school" and adapted themselves, as one might say, to their environment by assuring religious people that "we are fearfully and wonderfully "made," and quoting Latin tags where the intellectual atmosphere was classical. They "exhibited" stimulants with great freedom and on slight provocation. Speaking of the transition of the old type of doctor to the new, Mr. Russell makes the extraordinary statement that the first time he ever fell into the hands of a moustached doctor was in 1877. Every one condemned the hirsute appendage as highly unprofessional, and the wearer found his way into a lunatic asylum, whereat the doctors of the old school were not surprised. Our own recollection of a period somewhat more remote is that the doctor was bearded like the pard, while the medical student was, like Bottom, marvellous hairy about the face. As to clothes, though the frock coat was almost *de rigueur* in the Seventies, we have known famous physicians who saw their patients in velvet jackets or similar easy attire. Mr. Russell implies that "the courtly "manner of the old school" went out *sensim sine sensu* in comparatively recent days. But long before the middle of the century Sir Henry Halford, the eel-backed baronet as he was called, who died in 1844, was ridiculed for making three profound bows to the inanimate body of Lord Liverpool, then Prime Minister, whom he found struck down by apoplexy. This was in 1827. The doctor's manners have become less ceremonious in harmony, with the general relaxation of etiquette that has taken place in society. Mr. Russell amusingly compares the roundabout way of approaching a case of the older school with the direct manner of coming to business of the present generation. He fixes the date of the reaction against alcoholic treatment at January 10th, 1872, when the heads of the medical profession published their opinion that "alcohol, in "whatever form, should be prescribed with as much "care as any powerful drug, and the directions for its "use should be so framed as not to be interpreted as "a sanction for excess." Years after that time, however, stimulants were lavishly given by physicians of the highest reputation. Mr. Russell thinks that quite lately he has discovered signs of a return to earlier practice. His doctor, when he happens to look in

about 9 p.m., submits without resistance to a glass or two of Château Margaux from his patient's bottle. He supposes this is altruism, and that the doctor drinks his portion of poison in order to prevent his patient from taking an overdose. It might be suggested that like the Christian Scientist in Mr. Benson's novel, who cures a laudanum drinker by taking an equal amount of the stuff, he is sharing the bottle to show the harmlessness of the draught.

A BONESETTER'S CURE.

IT has often been pointed out that a large part of the bonesetter's art lies in his boldness in breaking down adhesions in cases where the educated surgeon would fear to break a bone. The bonesetter's maxim is that of Danton: *De l'audace, toujours de l'audace.* And, though his violent ways often do damage, he unquestionably sometimes succeeds where more timid methods fail. The following is an instructive example: Dr. Hirigoyen, in the *Journal de Médecine de Bordeaux*, relates that there dwelt at Arcachon, in a magnificent villa, a lady of "a certain age" afflicted with a dislocation of the shoulder of three or four years' standing. She was very timid and emotional, and had never been able while conscious to allow any effort to be made to replace the head of the humerus, and she would not allow herself to be anaesthetized. She went to Arcachon in the hope that the air would cure her infirmity. The local faculty having expressed some doubt as to the influence of climate on such a condition, she made up her mind to leave the place. Her gardener, learning this, said to her, "Madam, do not go "away. I know a very skilful man not far from here "who will assuredly cure you." She at once ordered the great man to be telegraphed for, and soon there came to her a native of the Landes, short, thin, ill-shaven, with large bushy beetling eyebrows over piercing and sly eyes, enormous hands, as hairy as those of a gorilla, a filthy cap and sabots that looked as if they were built on the model of Noah's Ark. On being introduced into the drawing-room, he said at once, "Madam, if you wish me to cure you I must be "alone with you. Chuck all these ——— servants "out." The Countess, though a little taken aback, obeyed him. The bonesetter then rose slowly from an armchair in which he had seated himself, locked all the doors of the room, and sat down in front of his patient. He looked at her steadily and seriously for a moment without saying anything; then all at once he bounded up, raised his immense fist, and made as though he would throw himself upon her. The Countess, half dead with fear, uttered a shriek, quickly raised her two arms to protect her face, and—reduced the dislocation!

SIMPLICITY IN SURGERY.

"WITHOUT erysipelas and suppuration surgeons would "be gods," said Velpeau; but M. Richelot, who quoted him the other day, was fain to add: "Erysipelas and "purulent infection have disappeared, yet I believe "that we remain men."[1] M. Richelot has a grievance. It weighs upon his soul that the divine simplicity of genius, when it had banished the incubus of surgery at the behest of Pasteur and Lister, seemed to desert the annals and practice of the art it should have glorified. The very means by which the surgeon of to-day keeps at bay infection is in danger of becoming the negation of all simplicity. The aseptic régime involves an intricate ceremonial that offers every day another and another chance for human error and mechanic fault to break guard. Diagnosis, if ever it were simple, is so no longer. The electrician, the radiographer, the haematologist, and seven others possess and dominate the clinician. Perfect simplicity in surgery, as in women's dress, is supremely difficult of attainment in both cases, and usually very costly; no one can tell in what exactly it consists. Simplicity of practice, says Richelot, is the outcome of sound judgement; and "simple ideas are the fruit of experience," and "the "happiest innovations evolve themselves"; and there is no antagonism, he declares, between progress and that clarity of ideas which leads to simple directness in treatment. The difficulty is to disentangle the progressive idea from the parasitic, to sift the wheat from the chaff. It is austere, even idle, to demand a sound basis for all surgery in physiology and pathology, when the pathology of to-day is no longer that of yesterday, and the new physiology belies its parentage. Perhaps this is the difficulty that has engendered a *chirurgie simpliste* to fall under the lash of Richelot. The "simplicist" has an explanation for all phenomena. For him the apparent is the obvious and the obvious contents him. He weighs a dead dog and finds it no different from the live; he weighs a dead body and it is lighter than the living man; so, he measures the soul. He observes that appendicitis is more frequent in man than in woman; bethinks him that the appendix lies upon the psoas; that the psoas is better developed in the male; so, is it not clear that the psoas plays the appendix tricks which teach it to become infected? Every one has his days of despondency, and it may indeed be that in looking back over twenty-five years of surgery, M. Richelot felt the promise of the earlier years had not been entirely fulfilled. He declares that he was not himself led away, like the "simplicists," into the vain belief that the discovery of a microbe was equivalent to the extinction of a disease. He foresaw that the matter was not so simple. It is, fortunate, perhaps, that same spirit of healthy scepticism still survives; and, though busybodies may run about after strange gods, and vaunt stranger doctrines, yet the great body of surgeons, who are now more and more one family the world over, preserve a singleness of aim and a sincerity of purpose which promise to triumph over a confusion of issues, inseparable from rapid expansion, and to keep the straight road in spite of many divagations by individuals. The springs of surgical conduct are themselves complex and progressive; the medium of craftsmanship is no less variable than life, yet the preservation of simplicity in principle and practice is an ideal never quite forgotten.

[1] *La Tribune Médicale*, October 23rd, 1909.

A GALLANT DEED.

THE Royal Humane Society medal was presented on November 16th to Dr. Leonard William Oliver of Ropley, Hampshire, in recognition of the bravery which he displayed in connexion with an accident which occurred some time ago. It appears that two men who were cleaning out a large cesspit had got to within eighteen inches of the bottom, when a third man descended by a ladder, and was immediately overcome by the gases at the bottom. One of his comrades went down to assist him, but on reaching the bottom was himself overcome and fell. The third man, warned by the fate of his comrades, gave the alarm, and the most helpful person the villagers could think of was the doctor. He did not disappoint them, and after burning straw in the hope of getting rid of the gases he was himself prepared to descend when the police constable who had arrived interposed with the remark that the doctor would be of more use at the top. The policeman was then roped and went down to the bottom of the well, but,

finding the weight greater than he could lift, Dr. Oliver went to his assistance, and together they succeeded in getting the two unconscious men to the surface. One Dr. Oliver was able to resuscitate, but the other was already dead. We desire to congratulate Dr. Oliver, who is a member of the Winchester Division of the British Medical Association, on the recognition which his gallant conduct has received from the Royal Humane Society, and he will have been glad that a similar honour was conferred upon the police constable and the resuscitated man.

TREATMENT OF SLEEPING SICKNESS.

DR. HODGES, P.M.O., Uganda, in a report on sleeping sickness camps from December, 1906, to November 30th, 1908,* recently issued by the Sleeping Sickness Bureau, discusses amongst other matters the results of treatment of sleeping sickness by atoxyl and other drugs. These remarks, based as they are on the histories of the large number of cases that have now passed through these camps, are valuable. He states that (1) the improvement which occurs in many cases has not been maintained in the great majority; that (2) the prolongation of life which results has been of no benefit to the community and of at least doubtful benefit to the patients themselves; (3) that where the measures taken for preventing contact of the sick with the fly are practically complete, as in the Victoria Nyanza epidemic area, the diminution of infectivity produced by atoxyl treatment is of little value; (4) that the number of early cases which have maintained their improvement has steadily decreased and the number of persons likely to be permanently cured is now inconsiderable; (5) that the results obtained from atoxyl and mercury do not at present seem any more likely to be permanent than those obtained from atoxyl alone; (6) that increased experience in the use of organic arsenical remedies, combined with their practically constant supply in a chemically pure condition, has not up to the present brought about any corresponding rate of improvement in statistics; but that (7) it remains true that better results have been obtained from treatment with organic arsenic, alone or combined with other drugs, than from any other method. The outlook, then, according to Dr. Hodges, is not very hopeful, and it will be necessary to persevere in trying to discover other drugs. It is stated in an appendix that cases of defect of vision or blindness following the use of atoxyl and allied drugs have occurred less and less frequently until at present they are quite exceptional. A report by Lieutenant Fraser on the breeding grounds of the *Glossina palpalis* indicates that they are much more extensive than has hitherto been supposed, and this of course must render any attempts at attacking the disease by the extermination of the fly a difficult task. Dr. Hodges believes that the segregation camps have up to the present justified their existence, and there seems no reason to doubt that this is true.

ILLUMINATING ENGINEERING SOCIETY.

PROFESSOR SILVANUS THOMPSON, first President of the Illuminating Engineering Society, delivered the inaugural address, in the course of which he said that the main object of the society was to provide a neutral platform for the discussion of questions connected with illumination, affording a common meeting ground for illuminating engineers, and for the medical, architectural, and other interested professions. Professor Thompson sketched briefly the progress of the art of illumination, referring to the fact that in 1819 the authorities objected to the lighting of the House of Commons with gas. There had been a rapid development in the means of illumination, in the distribution of illuminants, and in the measurement of luminous values and photometry. Newton, he said, had placed England in the forefront as regards optics, but in his works there was not a line about the measurement of illumination. Two standards, he argued, needed to be established—an international unit of light and an international unit of illumination. The former was at last being settled, but there was still no common agreement as to the latter. The minimum illumination that could be considered satisfactory in schools was, he contended, 1½ candle-foot. It was useless merely to lay down a regulation that adequate illumination must be provided, for, though the eye could equate, it was quite incapable of appraising. He described various forms of photometers and various aspects of photometric work. He pointed out the common fallacy involved by the misapplication of the law of inverse squares, "so fatally and absolutely mis-" leading if applied to any other than a point source." He suggested various topics for discussion by the society, or by technical committees appointed by it, such as the determination of the geometric laws of radiation, and the specific lightness of various surfaces; there were, he said, many physiological problems, as, for example, what was the greatest brightness that the eye could tolerate; there was much requiring examination in connexion with the illumination of rooms, especially in view of the fact that insufficient illumination was the principal cause of myopia, and especially of progressive myopia. He urged the importance of providing suitable walls and ceilings in the schools, and of securing the presence of a certain amount of shadow.

"SECRET REMEDIES."

NOTWITHSTANDING the "conspiracy of silence" on the part of that large part of the public press which lives by quack advertisements, the book bearing this title issued by the British Medical Association, in which the results of a careful analysis of many of the preparations offered to a credulous public as specifics for this or that malady are stated in plain language, continues to command a large sale. We cannot affect to believe that this is a proof of increased enlightenment of the public mind as to the uselessness of these nostrums; we take it that what has opened the eyes of the man in the street to the wiles of the advertiser is the exposure of the way in which he is defrauded by having to pay extortionate prices for wares that could be bought for a small fraction of what he is charged. The population of these islands may, as Carlyle said, be mostly fools; but they are all open to the *argumentum ad crumenam*, and are ready to resent an attack on their pocket. The objection to secret remedies of all kinds is not only that they are generally useless and not infrequently injurious, but that they always cost immensely more than their intrinsic value. The net is spread in the sight of all gulls in the newspapers, and too many of them are caught in its meshes. We have done our best to warn them off, and we have the satisfaction of knowing that to a certain extent we are succeeding. Considerably over thirty thousand copies of the little book have been sold. Many of the purchasers are chemists who keep it on their

*Progress Report on the Uganda Sleeping Sickness Camps from December, 1906, to November 30th, 1908. By A. D. P. Hodges, M.D. Lond., P.M.O., Uganda. With an appendix on Breeding Grounds of *Glossina palpalis*. By Lieutenant A. D. Fraser, R.A.M.C., and Claude H. Marshall, M.R.C.S., L.R.C.P. London Sleeping Sickness Bureau, Royal Society, Burlington House, W. 1909.

counters. All honour to them for their help in protecting the public against fraud and imposture. We venture to suggest that doctors would do well to follow this example by keeping the booklet on the table in their consulting rooms. It would be more useful and more amusing to their patients than the back numbers of illustrated weeklies which are generally provided for their entertainment. In a letter just received the writer describes *Secret Remedies* as "a book whch deserves the thanks and gratitude of all mankind." Well, mankind was described by one who thoroughly understood it as made up of "them as has brains and them as hasn't"; and he went on in a burst of frankness to declare that the latter were made to be the prey of the former. The nostrum vendor would doubtless divide mankind into those who make quack medicines and those who buy them. The great principle of the Manchester school of political economists used to be *Caveat emptor*. Our book supplies him with the means of taking care that he is not cheated into buying remedies the therapeutic virtue of which—when they have any—lies in their secrecy.

TUBERCULOSIS EXHIBITIONS.

The success of the tuberculosis exhibitions in Ireland and in Whitechapel has, as we stated recently, encouraged other districts to follow the examples thus set, and we are glad to be able to record this week a further extension of the movement. A tuberculosis exhibition for Chelsea, Fulham, and Westminster was opened at the Town Hall, King's Road, Chelsea, this week, and will remain open until Saturday, December 4th. It is arranged so as to show the extent of tuberculosis, its causation, the unhealthy dwellings in which it lurks, the way in which it is spread, and the way it is prevented and cured. There is a special section devoted to tuberculosis amongst children, containing special exhibits from hospitals for children, including the Children's Sanatorium for Early Cases of Consumption at Holt, Norfolk. At the opening ceremony, Dr. Louis Parkes, M.O.H., Chelsea, said that the exhibition, though full of interesting objects, might have been a great deal more interesting if the Government departments and municipalities had assisted. In Germany all the Government departments interested would have been well represented, but at Chelsea only the War Office appeared. Popular lectures are to be delivered each evening until the close of the exhibition. A similar exhibition will be held in Paddington from December 8th to December 17th, and we may add that Dr. Butler-Hogan, M.O.H. for Tottenham, has been able to arrange for Dr. R. W. Philip of Edinburgh to give a lecture on the prevention of consumption in the Tottenham Council chamber on December 15th.

EDINBURGH AND ST. ANDREWS.

At a recent meeting of the Conservative Association a letter was read from Sir John Batty Tuke stating that he did not intend again to offer himself as a candidate for the parliamentary representation of the Universities of Edinburgh and St. Andrews, and Sir Robert Finlay, K.C., Attorney-General under the last Conservative Government, was immediately adopted as the Conservative candidate at the approaching general election. This seat is one of the few upon which the medical profession has peculiar claims, inasmuch as a very large proportion of the constituency are graduates in medicine. It is often asserted, with what truth we cannot say, that the majority of the members of the medical profession are Conservative in politics, and there may be others who consider that university representation is an anomaly, but all will, we believe, agree that so long as it continues it should not be used as a counter in the game of party politicians. If, therefore, a suitable candidate belonging to the medical profession, and acquainted with its needs and aspirations, comes forward, we venture to think that his claims will deserve the careful consideration of the medical graduates of the two universities, apart altogether from the colour of his politics. It is true, we believe, that Sir Robert Finlay holds a medical degree from the University of Edinburgh, but he is a lawyer, and has not at any time shown the least interest in the profession to which at one time he nominally belonged; in fact, we do not think that we go too far when we say that his attitude towards the profession has been distinctly unfriendly. The position will, no doubt, be cleared within a short time, and meanwhile it seems undesirable that medical graduates should pledge themselves.

VOLUNTARY AID DETACHMENTS.

An address given by Sir Alfred Keogh, Director-General of the Army Medical Service, at a meeting of the council, presidents, and honorary secretaries of the county branches of the British Red Cross Society, held by permission of the King at St. James's Palace last month, has been published by the Society as a pamphlet. Sir Alfred Keogh explained the principles which had guided him in suggesting the formation of voluntary aid detachments in every county. We have already published at some length the general plan recommended, and the arguments by which its adoption has been commended to the country. The problem was to provide an organization for the relief of the sick and wounded in England and Wales in case of invasion, and in the scheme the nature of the work to be done was categorically defined. In his address last month Sir Alfred Keogh said that it was not necessary to suppose that the last word had been said upon the perfecting of the proposed organization; if there were no differences of opinion, there was ample room for such modifications as local requirements might render necessary, the county associations possessing ample powers to make such changes as the county organizers might desire. Opinion was, he said, unanimous that the individuals composing a voluntary aid detachment should possess a working knowledge of first aid and field nursing, and that only after they had gained such knowledge should they undertake the task of acquiring the special knowledge necessary for its adaptation to local circumstances and military needs. The Committee of the County Branch of the Red Cross Society would undertake the formation of a voluntary detachment, and the heads of the detachment would undertake the training of the unit and the development of local plans.

THE STUDY OF CHILDHOOD.

The Child-Study Society has enlisted the co-operation of Professor Karl Pearson and of the Galton Laboratory at University College in a scheme to make a scientific study of certain aspects of child-life. Professor Pearson has drawn up a schedule for studying the factors influencing the social life of the child, to be filled up by heads of families, or teachers intimate with families. It is addressed specially to the upper middle or professional classes, and the particulars to be given include those with regard to father, mother, and at least two children. The object of the inquiry is to discover the extent to which nature and nurture respectively contribute to the character of the child.

The schedule has separate sections for data as to to father and mother, and up to six children, and covers a very wide field, including the liking for indoor and outdoor games or occupations, the books the child likes to read or have read to it, its like or dislike of school, its disposition to lead or to follow, with, in addition, particulars as to general health. Parents who prefer that the actual name of their family should be withheld can fill up a copy of the schedule on that understanding, supplying their name solely to the secretary, who issues the copy with a key number. Copies can be obtained from the Secretary of the Child-Study Society, 90, Buckingham Palace Road, London, S.W., but it seems to be intended to appoint local secretaries.

THE Royal Commission on the Care and Control of the Feeble-minded recommended that there should be one central authority only for the general protection and supervision of mentally defective persons, and for the regulation of the provision made for their accommodation and maintenance, care, treatment, education, training, and control. We understand that the Lord Chancellor has resolved, as a first step in this direction, that the duties of the Lord Chancellor's Visitors in Lunacy shall be transferred to the Lunacy Commissioners, and that for this purpose the present Visitors shall be added to the board.

Medical Notes in Parliament.

The Housing and Town Planning Bill.

THE Housing and Town Planning Bill occupied the House of Lords for over three hours on November 19th.

Before considering the amendments made in the Commons to the Lords' amendments there was a general discussion, initiated by Lord Salisbury, on the concessions made by the Government, which he regarded as insufficient. The supreme position given to the Local Government Board, with which they disagreed in a large measure, remained. A concession had been granted as regards town planning by which a scheme had to be laid before Parliament for thirty days. After a general review of the new position arrived at he advised the acceptance of the compromise proposed. Lord Crewe followed, and Lord Cross and Lord Lansdowne also spoke in the general discussion, which closed with a speech from the Lord Chancellor, who defended the action of the Government in refusing an appeal in housing cases to a county court judge. The motion to consider the Commons' amendments was then agreed to.

Lord Beauchamp having moved that the Lords do not insist on their amendment to Clause 2 respecting the compulsory acquisition of land, Lord Onslow made a protest against the adoption of the plan embodied in the Small Holdings Act for the acquisition of land; but the motion not to insist was agreed to. On Clause 60 (acquisition of land comprised in a scheme) Lord Beauchamp moved an amendment providing that the compulsory purchase should be by the same procedure as that by which a local authority now purchases land in an urban district. This amendment was agreed to, and will have the effect of giving town planning schemes the simpler plan adopted for compulsory purchase in Clause 2. In the first and sixth schedules further amendments in the same direction were agreed to, by which in urban districts the compulsory purchase of land should only be exercised after an inquiry by an impartial person, and unless the Local Government Board agreed to the findings of the inquiry, the matter should be referred to the two Houses of Parliament.

On Clause 10 (power of Local Government Board on complaint to enforce powers), Lord Beauchamp moved that the Lords do not insist on their amendment requiring that an order under Part 3 of the principal Act should not take effect till a draft had lain on the table of both Houses of Parliament for thirty days, and that if either House presented an address against the draft no further proceedings should be taken thereon. He proposed, however, to move that the order, when made by the Local Government Board, should be laid before both Houses. The proposals of Lord Beauchamp were agreed to after a protest by Lord Middleton. A second amendment to Clause 10 made by the Lords was also dropped.

On Clause 13 (power of county councils to exercise powers of rural district council under Part 3), Lord Beauchamp moved that the Lords should not insist on their amendment, which provided that the expenses incurred should be defrayed not out of a county rate, but, if thought well after an inquiry, out of the district. The House of Commons held that this altered the incidence of rates, and was therefore beyond the competence of the Lords. Lord Lansdowne regarded it as an extreme and violent assertion of the House of Commons privilege. Lord Crewe defended the position taken up by the Commons, which was attacked by Lord Salisbury and the Duke of Northumberland. The motion to give up the Lords' amendment was agreed to.

On Clause 15 (keeping houses in repair) two amendments of the Lords were dropped, the second of which set up the county court as an appeal court instead of the Local Government Board. On this point there was an animated discussion, but the amendment was not insisted on, and a Government compromise to hold a local inquiry before dismissing an appeal was accepted.

The amendment which defined a landlord as a person who "lets to a tenant for his own habitation" was by consent modified by leaving out the words "his own." Clause 24, which had been struck out by the Lords, was restored.

On Clause 40, dealing with appeals to the Local Government Board, the Lords consented to withdraw their amendments, the Government inserting a provision for an appeal to the High Court on any question of law. The Lords' amendments as regards back-to-back houses and their definition of the "working classes" were not insisted on. The Lords' amendments to the clauses relating to town planning were not insisted on, but on Clause 57 an amendment by the Government was accepted providing that any question as to a contravention of a scheme should be referred to the Local Government Board, and in case of disagreement, be settled by the Board as arbitrators. On Clause 58 the betterment question was settled by the omission of the Lords' amendment and the insertion of the words "one-half" after "value" in the last line of the clause, so as to give half the increased value to the local authority and half to the landowner. The Commons' amendment as regards compensation was accepted—providing for settlement by a single arbitrator, unless both parties agreed to some other plan.

On Clause 68 (appointment of medical officers by county council) the following new subsection, inserted by the Commons, was agreed to:

> The duties of a medical officer of health of a county council shall be such duties as may be prescribed by general order of the Local Government Board and such other duties as may be assigned to him by the county council.

A further amendment, limiting the information which the medical officer may reasonably require from the medical officer of health of a district to the latter's "duties prescribed by the Local Government Board," was criticized as inadequate by Lord Belper, but the Government refused to concede more, and the amendment was agreed to. A new subsection was inserted, requiring that an Order prescribing the duties of medical officers of health should be laid before Parliament. Lord Beauchamp moved that the Lords do not insist on deleting the subsection providing that a medical officer of health should only be removed with the consent of the Local Government Board. The motion was agreed to.

The Lords' amendments to the schedules were then considered, and, by consent, not insisted on, and the bill has been returned to the House of Commons for final acceptance. It will come on for consideration late in this week.

THE REGULATIONS OF THE MIDWIVES BOARD.

REMUNERATION OF MEDICAL MEN SUMMONED BY MIDWIVES.

AT a meeting of the Branch Council of the General Medical Council for England held on Wednesday last a communication from the Privy Council was read transmitting for the information of the General Medical Council the amendments to the rules of the Central Midwives Board which have been made by that Board with regard to the occurrence of ophthalmia neonatorum and with regard to the conditions under which it is obligatory for a midwife to summon medical help. The amendments are as follows:

Ophthalmia Neonatorum.

Rule E., 14.—Substitute "must" for "should."
Rule 14 reads at present:

> "As soon as the child's head is born, and, if possible, before the eyes are opened, its eyelids should be carefully cleansed."

Rule E., 19 (2).—Add new line at end: "Purulent discharge."
Rule 19 (2) (which relates to the conditions in which medical help must be sent for) reads at present:

> "(2) In the case of a pregnant woman:
> "(*a*) If the patient is a dwarf or deformed;
> "(*b*) When there is loss of blood;
> "(*c*) Where there is any abnormality or complication, such as:
> "Excessive sickness;
> "Puffiness of hands or face;
> "Dangerous varicose veins."

Rule E. 19 (3).—After the words "complication such as" insert new line: "A purulent discharge."
This rule also refers to the conditions under which medical help must be sent for. The present rule reads as follows:

> "(3) In the case of a woman in labour at or near term, when there is any abnormality or complication, such as—
> "A malpresentation;
> "Presentation other than the uncomplicated head or breech;
> "Where no presentation can be made out;
> "Where there is excessive bleeding;
> "Where two hours after the birth of the child the placenta and membranes have not been completely expelled;
> "In serious cases of rupture of the perinæum, or of other injuries of the soft parts."

The Branch Council resolved to inform the Lord President that it approved of the suggested additions to the rules, and further resolved to take the opportunity of conveying to the Lord President their opinion that in Rule E. 19 (3) the line reading "Presentation other than the uncomplicated head or breech" be amended by the omission of the words "or breech," on the ground that this particular presentation is one of special danger to the life of the child.

The PRESIDENT then read the recommendations of the Departmental Committee on the working of the Midwives Act with reference to the remuneration of medical men summoned on the advice of midwives. The recommendations were printed in the BRITISH MEDICAL JOURNAL of August 28th, 1909, p. 558, and it will be remembered that they were to the effect that a secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of emergency, that the Poor Law authority should be responsible for the payment, being empowered to charge the fee paid as relief on loan to the patient, and that a list of medical practitioners willing to respond to a midwife's call should be prepared and circulated in every area.

The Branch Council requested the President to inform the Lord President that it had learnt, with much satisfaction, of the recommendations of the Departmental Committee, and desired to urge upon his Lordship, and through him upon the Government, the importance of giving legislative effect to them as speedily as possible.

MR. S. NOY SCOTT, M.R.C.S., L.R.C.P., D.P.H., of Elmleigh, Plymstock, M.O.H. to the Plympton St. Mary Rural District, has been made a Justice of the Peace for the County of Devon.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

SCOTTISH ASSOCIATION OF MEDICAL WOMEN.

THE Scottish Association of Medical Women held its annual meeting in the Café, Edinburgh, on Saturday, November 13th, Dr. Elsie Inglis, President, in the chair. After the business of the year had been transacted by the Council and the balance-sheet submitted and approved, a conference of Scottish medical women was held upon the difficulties that have arisen in connexion with appointments under school boards and public health authorities. Mrs. Chalmers Watson, M.D., made a report on the work done by the Information Bureau of the association in co-operation with the Vigilance Committee of the Association of Registered Medical Women in London, with the view of getting school boards and public health authorities to give equal remuneration to men and women medical officers. Dr. Louisa Garrett Anderson, of London, then gave an account of similar work done in England, reminding those present that strength was to be found in union, and that it was a principle for all women to adopt that equal pay should be given for equal work, and that no disabilities should be imposed on account of sex. Eighteen posts had been dealt with in England where the salary offered to a woman for full-time work was less than that offered for the same work to a man; much valuable help had been given by the Medical Secretary and by the honorary secretaries of the local Branches and Divisions of the British Medical Association, who had caused warning notices against such posts to be inserted in the JOURNAL.

After Dr. Mercer Watson had spoken upon the economic aspect, pointing out that medical women must not regard themselves as philanthropists, but as wage-earners who had to keep salaries up to the local standard and refuse to undersell their colleagues, the local medical men, Dr. Mears spoke upon the ethical aspect of the subject; there was, she said, a strong temptation for doctors to give too much of their services for nothing; but although health must never be put on the same plane with money, definite work should command a definite salary, and skill and experience receive adequate remuneration. Dr. Inglis closed the discussion by commending the loyalty of the younger women who had refused to apply for these posts, and thereby enabled a strong stand to be taken for the benefit ultimately of medical men as well as of medical women. The following resolution was put to the meeting and carried unanimously:

> That this conference upholds and entirely approves the findings of the British Medical Association on the question of the remuneration of school medical officers—namely, that the minimum salary for full-time work should be at the rate of £250 yearly, and that for equal work the remuneration for men and women should be the same.

INFECTIOUS DISEASES.

The Local Government Board for Scotland has just issued a Supplement to its Fourteenth Annual Report containing statistics of infectious disease notifications and of mortality.

The returns show that in 1908 the number of cases notified under the Act was 31,930, and that of these cases 20,996 were treated in hospital by the local authorities. It has to be borne in mind, however, that the above figures refer only to disease in respect of which notification is compulsory under the Act, and that they do not include diseases to which the Act has been voluntarily extended by the local authorities.

Small-pox.

Two cases of small-pox were notified in the counties; 80 cases were notified in the burghs.

Typhus.

Ten cases were notified in the counties and 44 cases in the burghs.

Diphtheria, Scarlet Fever, and Enteric Fever.

Cases notified in the counties during 1908: Diphtheria, 1,981; scarlet fever, 5,345; enteric fever, 804. Cases notified in the towns during 1908: Diphtheria, 4,279; scarlet fever, 12,858; enteric fever, 1,523.

Two tables have been prepared from these statements, the one showing for each landward and burghal area the population, acreage, number of births, and number of deaths (*a*) within certain age periods, and (*b*) from certain causes, under 5 years and 5 years and upwards; the other showing the number of persons per acre, birth-rate per 1,000 of estimated population, deaths under 1 year per 1,000 births, and death-rate per 1,000 of estimated population.

The birth-rate in Scotland (landward) in 1908 was 26.7, as against 26.2 in 1907; in Scotland (burghal) it was 27.7 in 1908, as against 27.5 in 1907. The birth-rate was higher in the burghal than in the landward areas of all the counties excepting in Ayr, Fife, Edinburgh, Kincardine, Lanark, Nairn, Peebles, Ross, Roxburgh, Selkirk, Stirling, Sutherland and Wigton.

The death-rate in Scotland (landward) in 1908 was 14.7; in 1907 it was 14.4. In Scotland (burghal) it was 16.6, as against 16.6 in 1907 per 1,000 of their estimated populations. The death-rate was higher in the burghal than in the landward areas of all counties except Argyll, Bute, and Fife. The infantile death-rate in Scotland under one year per 1,000 born was, in 1908: Landward, 103.3; burghal, 128.4. Over all Scotland the different rates per 1,000 of the population at census 1901 was for 1908: Birth-rate, 27.4; death-rate, 16.0; infantile mortality per 1,000 born, under one year 120.2.

Scottish Branch of British Red Cross Society.

The War Office has now sanctioned the scheme submitted by the Scottish Branch of the British Red Cross Society for the formation of voluntary aid detachments for service in the event of war. The proposals put forward by the Scottish Branch differ from the scheme for England and Wales which is now in course of organization. In Scotland the idea is to have a Territorial Red Cross Brigade under the control of the Executive Council. Three districts will be formed, each under a director, while the various counties will be grouped in these districts. The work connected with the general hospitals equipment, etc., will be left to the Territorial County Associations, and will not be taken up by the Red Cross Society as indicated in the War Office circular of May, 1908. The details of the scheme are at present in course of adjustment, the sanction of the War Office to the brigade proposal having just been given.

Royal Society of Edinburgh.

At a general statutory meeting of the Royal Society of Edinburgh, on Monday, November 22nd, it was reported that the Council had awarded the Gunning Victoria Jubilee Prize for the third quadrennial period 1904–8 to Professor George Chrystal, M.A., LL.D., for a series of papers on Seiches, including the Hydrodynamical Theory and Experimental Investigations of the Seiche Phenomena of certain Scottish Lakes; and the Makdougall-Brisbane Prize for the biennial period 1906–8 to D. T. Gwynne-Vaughan, M.A., F.L.S., for his papers (1) on the Fossil Osmundaceae, and (2) on the Origin of the Adaxially-curved Leaf-trace in the Filicales, communicated by him conjointly with Dr. R. Kidston, the committee having read a letter from Dr. Kidston explaining the conditions of their joint authorship. A paper on the Pharmacological Action of Harmaline, by James A. Gunn, M.A., M.D., was communicated by Sir Thomas R. Fraser.

Ireland.

[From Our Special Correspondents.]

Ulster Medical Society.

The annual dinner of this Society was held in the Medical Institute, Belfast, on November 18th. The President, Dr. J. J. Austin, occupied the chair, and upwards of seventy guests and Fellows sat down. After dinner the President gave the loyal toast of "The King," and next of "The Lord Lieutenant and Prosperity to Ireland." He alluded to the indefatigable labours of Lord and Lady Aberdeen to their furtherance of every cause calculated to promote the welfare of Ireland, and to their welcome visit to the recent annual meeting of the British Medical Association. Dr. Austin then referred to the signs of increased prosperity; Sir William Whitla replied, and endorsed the references of the President to Their Excellencies. Mr. R. J. Johnstone, in a characteristic speech, proposed "Our Guests," which was responded to by Dr. Moorhead, President of the Ulster Branch of the British Medical Association; Mr. J. C. Jones, M.A., Principal of the Royal Academical Institution; Mr. R. J. McMordie, M.A.; and Mr. Garratt. Sir John Byers next gave the toast of "The President," and referred to the high rank occupied by Dr. Austin in the profession, and to his recent valuable obstetrical contribution at the annual meeting in Belfast. In his reply Dr. Austin gave many interesting and amusing reminiscences of his student days in Belfast. He proposed the health of the Honorary Secretary (Mr. Howard Stevenson), and accorded him the society's thanks for his many labours as Secretary. Mr. Stevenson replied. During the evening recitations and songs were contributed by Messrs. Rae, McKee, Patterson, and Brennon.

Belfast Medical Students' Association.

The inaugural meeting of the association was held at the Students' Union, Queen's University, on November 19th. Dr. Dickie, the retiring president, introduced his successor, Mr. Crymble, who gave an opening address, Post-graduate Study, remarkable for its clearness and good judgement. He urged the advisability, if it were at all possible, of a year or so being spent in research work as a training for the future, and of residence in some foreign school. Many American doctors spent a session every few years in some large medical centre, and their example might be imitated by their English and Irish brethren. Dr. Gibson, of Edinburgh, then gave an address on University Ideals. A vote of thanks to Dr. Gibson, proposed by Mr. Holmes and seconded by Professor Lindsay, was cordially adopted, and Dr. Gibson replied.

Registrar-General for Ireland.

Sir William J. Thompson, M.D., has been appointed Registrar-General for Ireland in succession to Sir Robert E. Matheson, who will retire on December 1st. Sir W. J. Thompson, who was born in 1861, was educated at Trinity College, Dublin, where he graduated M.D. in 1895; he is Physician to the Jervis Street Hospital and Physician-in-Ordinary to the Lord Lieutenant. He is a member of the council of the Leinster Branch of the British Medical Association and Honorary Secretary of the Women's National Health Association of Ireland.

England and Wales.

[From Our Special Correspondents.]

BIRMINGHAM.

The Huxley Lecture.

The Huxley Lecture was endowed by a friend of the Birmingham University on similar lines to those of the Romanes Lecture at Oxford. The lecture is delivered annually in order that citizens of Birmingham may have the advantage of hearing from a distinguished investigator some recent results of his researches. This year the lecture will be delivered

on December 1st in the Mason College Building of the university by Professor Bateson, F.R.S., of Cambridge; his subject is "Mendelian Heredity."

Complimentary Dinner to Professor Robinson.

The Medical Faculty and Senate of the University of Birmingham, together with a few private friends, entertained Professor Robinson—who, until his appointment to Edinburgh, was Professor of Anatomy in Birmingham—to dinner on November 20th, in the University Club, Birmingham. The Principal of the University, Sir Oliver Lodge, presided over the company, which numbered forty-five, among whom were Professors Barling, Poynting, and Hughes, Deans of the Faculties of Medicine, Science, and Arts respectively, many of the other professors, and some prominent public men. Sir Oliver Lodge proposed the toast of "Our Guest" in the happiest of terms. He spoke of his skill as a teacher, his renown as an anatomist, and his sterling qualities as a man. Professor Barling also spoke and referred to the able assistance Professor Robinson had given him as Subdean during the five years of his tenure of office in the university. He eulogized his services to the school as a teacher, investigator, and administrator. Professor Robinson made an appropriate reply, speaking particularly of the progress which the Birmingham Medical School had already made, and of the promise it gave of still greater progress in the future. A most enjoyable evening was spent, and a right hearty send-off given to Professor Robinson.

The Spread of Tuberculosis by Indiscriminate Spitting.

Dr. J. Robertson, M.O.H. Birmingham, has submitted an important report to the Health Committee on the spread of tuberculosis by indiscriminate spitting. He points out that the sputum of persons suffering from phthisis is by far the greatest source of infection, and that for practical preventive purposes no other human source of infection need be seriously considered. By the compulsory notification of all cases of phthisis coming under the care of the board of guardians, and by the voluntary notification of private patients by medical men in Birmingham, probably 60 to 70 per cent. of all cases of advanced tuberculosis of the lungs are known to the health authorities. These patients are visited and advised as to how to dispose of the sputum, and warned with regard to the danger of indiscriminate spitting. This, however, only touches the fringe of the general distribution of infection by sputum, for on an average every person suffering from phthisis has probably been spitting out the living germs of tuberculosis for at least a year before notification. The result is that there is a considerable amount of living tuberculous infection strewn on footpaths and other public places and in the dwellings of the patients. One hundred sputa picked up from the streets of Birmingham by a labourer in the employ of the health department were examined by Dr. Higgins, and 7 per cent. of the spits examined showed the presence of the bacillus. The instruction given to the collector was to collect yellow-coloured spits and to use only one sterilized outfit for each sputum, so that there might be no contamination. In Liverpool 5 per cent. of the sputa thus examined were found by Dr. Annett to contain virulent tubercle bacilli. The tubercle bacilli are found to be alive in the majority of instances, and capable of resisting the influences of desiccation and exposure for varying periods up to several months. The sputa in the streets are spread by the boots of pedestrians and taken into houses and offices; the dresses of many women become contaminated, and it is probable that infection is occasionally carried in this way if skirts are brushed in the bedroom.

Dr. Robertson suggests that spitting in the streets should be forbidden by by-laws, except in the channels and street gullies. He thinks that any general attention drawn to this subject will probably cause the majority of persons who are now addicted to unnecessary spitting to abandon it altogether. Notices requesting persons not to spit indiscriminately have been attached to lamp-posts, in omnibuses, and tram-cars, and in public-houses, factories, workshops, and places of public resort. In Birmingham, what is known as the model by-law against spitting in public places has not been adopted. This by-law is as follows:

> No person shall spit on the floor, side, or wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment, whether admission thereto be obtained upon payment or not.
>
> Any person offending against the foregoing by-law shall be liable to a penalty not exceeding £5.

Dr. Robertson does not recommend the adoption of this by-law as he does not think that it would have much more good result than is obtained by what has already been done in Birmingham. A short account is given of what is being done in certain American cities, and the following account of the Sanitary Code of New York is a typical example of it. Spitting is forbidden in public places, of which a long list is set out. The corporations or persons owning or having management or control of such places are made responsible for the posting of suitable notices against spitting and for calling attention to the provisions of the by-law. Violations of this by-law carries with it liability to pay a fine of 50 dols. Dr. Bensel, Sanitary Superintendent, writes under date June 1st, 1909:

> This section of the code is enforced by the summary arrest of offenders wherever found, and has resulted in a remarkable decrease in the spitting habit. Enforcement of a law of this kind can be made effective only by the summary arrest and the immediate fining of offenders in the police courts.
>
> It has not been the policy of the department up to the present time to publish the names and addresses of persons who have been arrested and fined, but I strongly believe that ultimately it will be considered advisable to adopt this means of informing the public of the consequences of violating the spitting ordinance.
>
> This department has also caused signs to be placed in the stations and in the cars of the elevated railroads and subways, and in all public conveyances, calling attention to the fact that spitting is a misdemeanour, and that offenders are liable to arrest and punishment. These signs have been a great help in preventing spitting.

LONDON.

Inspection and Treatment of School Children.

The Education Committee, in a report to the London County Council on November 23rd, stated that it had deliberated as to the usefulness of examining those children who were about to leave school, as required by the Board of Education in the 1909 code. Although treatment might be commenced while the child was at school there was no guarantee that it would be followed up afterwards. It appeared to the Committee, therefore, that the age at which the second examination prescribed by the Board should take place should be twelve years, in order that the children might be kept under observation, and if possible obtain treatment while at school. In this connexion the Committee had considered the possibility of some children about to leave school needing advice as to the kind of work best suited to them physically, and had instructed the head teachers to draw the attention of the school doctors to children who appeared to need such advice. The Council decided to ask the Board of Education to vary the code as suggested by the Committee. The report of the Education Committee on the result of the applications to hospitals in London with regard to the treatment of school children was only reached at a late stage of the meeting, and was consequently postponed after the chairman had stated that he was anxious that the matter should be settled at the next meeting of the Council.

Feeding of School Children.

The London Education Committee was asked on November 24th to approve an additional estimate of £25,000 to meet the expenditure in respect of the provision of meals for necessitous children. It was stated that the number of children fed this winter showed a great increase as compared with last year. During

the week ended November 12th the number fed was 41,934 as compared with 22,430 in the corresponding week of 1908. The report led to some discussion. Mr. Whitaker Thompson inquired if sufficiently stringent inquiries were made in all cases, and pointed out that last winter it was the experience that the number of children fed increased in the months subsequent to November. The Rev. Stewart Headlam, as a member of the Care Committee, declared that the inquiries made were most stringent. Mr. Jay, an ex-chairman of the Care Committee, drew attention to the extent to which the provision of meals was supplementing out-relief given by the guardians. At present the parents received out-relief, but the Care Committee denied the adequacy of the amount and gave the children free meals. The Care Committee was pressing the Local Government Board to take this matter into consideration and to advise. The supplemental estimate was approved.

What becomes of London Children?

The report of the Education Committee showing the extent to which scholars leaving London elementary schools drift into unskilled labour (summarized in the British Medical Journal, November 13th, p. 1433) was considered by the London County Council on November 23rd. The Committee made no definite recommendations for giving effect to its conclusions (1) that the school age should be extended to 15 years, and (2) that compulsory part-time classes should be attended by young people up to the age of 18, but invited the Council to express the opinion that if new duties connected with education were entrusted to local authorities corresponding Government grants should be made. The majority, however, declined to go as far as this, and an amendment substituting the words, "the Council, while not expressing any opinion on the suggestions contained in the report," was carried. The Committee was also instructed to consider the desirability of conferring with the Board of Trade with a view to the establishment of employment agencies for children leaving school in conjunction with the new labour exchanges.

In another report the Education Committee dealt with a proposal of the Finance Committee that the provision of centres for teaching domestic economy to girls be restricted to ten a year. The Education Committee pointed out that at this rate it would take twenty-six years to meet present needs, and many thousands of children would be unable to receive instruction which would enable them to become efficient "home-makers." The Rev. Dr. Scott Lidgett warmly supported a proposal to increase the rate of provision to 20 per annum, urging that it afforded an opportunity of dealing with the cause of the malnutrition of children—namely, the ignorance of their mothers in matters of health, cleanliness, and the preparation of food. The Council, however, decided to restrict the rate of building to 10 centres per annum.

MANCHESTER AND DISTRICT.

The Milk Supply of Manchester.

It appears from a correspondent in the *Manchester Guardian* that certain statements in Professor Delépine's lecture on the milk supply of Manchester, alluded to in this column last week, have caused considerable resentment among the Cheshire farmers. These statements were to the effect that while about 16 per cent. of the farms supplying the city have at one time or another sent tuberculous milk, Cheshire was the worst in this respect. Professor Delépine gave percentages of farms sending tuberculous milk, which varied from about 10 per cent., for an area about Hellifield and Clitheroe, to over 29 per cent. for an area of Cheshire south of Manchester. The Secretary of the Cheshire Chamber of Agriculture says that though he is not in a position to challenge Professor Delépine's statements, and though it was the duty of the Manchester officials to keep a keen oversight on the supply, no good and possibly much harm would result from the publication of sensational reports. He believed that most of the rural councils of Cheshire carried out the provisions of the Dairies and Cowsheds Act in a praiseworthy manner, and thousands of pounds were annually being spent in improvements. Mr. R. Shepherd, who owns the largest herd of milking cows on any one farm in England, refused to believe that Cheshire was more affected than any other county, and expressed the opinion that cows were well housed and cared for in the majority of cases. He admitted that there was room for improvement, but thought that the Government would have to provide funds at a reasonable rate of interest to enable tenants to remodel their cowhouses where landlords refused. To combat tuberculosis effectually, national action must be taken and compensation paid as an imperial charge.

Professor Delépine has thought it well, in view of the irritation caused by some of his remarks among the Cheshire farmers, to write to the *Manchester Guardian* on November 24th explaining that he had not intended to make any indictment against Cheshire farmers specially. He had pointed out that there had been great improvement in the Cheshire farms during the last twelve years. In one district of Cheshire, for example, he had shown that between 1902 and 1909 the percentage of farms sending tuberculous milk had been reduced from 28 to 5.7 per cent., a much greater improvement than had occurred in many districts of other counties. He had not been criticizing the intentions of the farmers, but only some of the methods on which they often relied.

During the year 1908 the food and drug inspectors for Manchester took samples of milk supplied by 289 farmers. Of these, 173 reside in Cheshire, and 20 of them (11.56 per cent.) sent tuberculous milk; 32 live in Derbyshire, and 2 of them (6.25 per cent.) sent tuberculous milk; 39 live in Staffordshire, and 3 of them (7.7 per cent.) sent tuberculous milk; 3 live in Shropshire, and none sent tuberculous milk; 34 live in Lancashire, and 1 of them (2.94 per cent.) sent tuberculous milk; 8 live in Yorkshire, and 1 of them (12.5 per cent.) sent tuberculous milk. These figures, of course, confirm in the main Professor Delépine's statements, for though the percentage for Yorkshire is the highest, the small number of farmers makes it no fair comparison. It is interesting to learn from the annual report of the health of Manchester that the difficulties the farmers labour under in the matter of compensation for tuberculous cattle is fully appreciated. Mr. Baittlebank, Veterinary Surgeon to the Corporation, accepting what the farmers seem to acknowledge, that any scheme for payment of compensation without contribution was unjustifiable, drew up a scheme by which farms should be graded into three classes—Good, Fair, and Bad. Each farmer was to pay a definite sum yearly for each head of cattle to a compensation fund, the deficit to be found by Government. The good farms were to have a compensation limit of, say, £15 a cow; the fair farms of £10; and the bad farms of £7. All farmers would pay at the same rate, but as they effected improvements would be entitled to promotion to the class next above. He also suggested that when a farm obtained a certificate of absolute freedom from tuberculosis, it should be placed in a separate division and freed from liability for the poll tax; any subsequent risk would then be entirely with the farmer himself. Thus compensation in perpetuity would be avoided. It was further suggested that any such scheme should be compulsory and under legal restrictions.

WALES.

Housing and Alcoholism.

Sir Victor Horsley delivered an address to a meeting of medical men and students held in University College, Cardiff, under the presidency of Dr. Fiddian, on November 13th. In the course of his address, which was illustrated by diagrams and tables, Sir Victor Horsley claimed that the enormous advance represented by a proper system of medical inspection

of school children, the teaching of school children how to observe the ordinary rules of health, and how to know really what temperance was, and the provision of definite machinery for carrying all this out, was really effected by the medical profession. He considered, therefore, that it had done, during the past six years, a very considerable work for the nation. Sir Victor proceeded to say that he did not believe the nation was rapidly deteriorating physically. It should be a question of statistics, but there were no statistics. Measurements of children on a sufficient scale were not now obtainable, but in future they would be obtainable. Mention was made of the work of the House of Commons Committee, which made diligent search into the cause of physical degeneration, and produced a report of immense value. The conclusion that the Committee formed by way of solution of the problem was that the unsatisfactory physical condition of the people was dependent primarily on two factors. One was the indifferent housing of the working classes, and the other the question of alcohol. The two things were interdependent. If a man was housed in a slum he would naturally go to the "pub." The best attempt that had yet been made to deal with the housing question—namely, by Mr. Burns's bill—had, in respect of its medical clauses, been mutilated by the House of Lords. He hoped very much that by the negotiations which were understood to be proceeding between the two Houses these clauses, which had the full support of the British Medical Association, would be reinserted, and that the House of Lords would be persuaded to withdraw from the position it had taken up. Turning then to the question of alcohol, Sir Victor said that personally he believed that every medical man—without using sentimental words—to be really patriotic, ought to be a total abstainer. It was not a purely medical question; it was a social question. They were citizens and they were ratepayers, and they had the right to look at it from the point of view of economic statistics. Members of the medical profession brought to the question a special knowledge of the lives of the people—a knowledge which was not acquired by any other profession. He did not suppose that even the members of the medical profession who drove about the streets all day long ever realized to what extent the nation was overwhelmed by the drink trade; he did not believe they had any idea of how many places there were in which alcohol was sold. It was perfectly idle to pretend that there were so many public-houses in order merely to meet the needs of the people. The poverty of the people was due to this parasitic growth on the community. Sir Victor Horsley quoted figures showing how the gross income of the nation increased by 50 per cent. every ten years. There was plenty of money in England, but it was not in the right pockets. He was glad that the expenditure upon whisky had come down about 30 per cent., but the nation still spent £180,000,000 every year on drink. In other words, it spent every year eight thousand times the amount that would guarantee the rebuilding of ten thousand houses for the working classes. The nation was crushed by its expenditure on alcohol, and the medical profession ought to do its best to put an end to such a state of things. It was a well-known fact that abstainers lived longer than non-abstainers, and the death-rate among publicans had gone up during the last five years, due to some drinking more whisky than beer. The statistics of friendly societies showed that, while abstainers claimed for 6.4 weeks' sickness, non-abstainers claimed 10.9. The moral was obvious: the selfish man who indulged himself in alcohol compelled the honest man—the abstainer—to pay for his medical attendance. These were facts which bore upon the physical health of the nation; they were facts which medical men ought to lay before the people. The use of alcohol was being discontinued in medical practice. Alcohol, he said, was not a food, and it was not a useful drug. He invited those present to join in the temperance work which was being done by the British Medical Temperance Association, under whose auspices the meeting was held.

A vote of thanks to Sir Victor Horsley was proposed by Dr. Herbert Vachell, and seconded by Dr. Maclean, and a similar compliment to Dr. Fiddian for presiding was passed, on the motion of Sir Victor Horsley, seconded by Dr. Crawford Treasure, the local honorary secretary.

A House Famine.

There is a great scarcity of dwellings at Brynamman, an industrial centre situate in the upper part of the Amman Valley. On the Black Mountain side of the town a number of families have erected shelters for themselves made of corrugated iron sheets, which are always available in districts where the tinplate industry flourishes, whilst on the Glamorgan side families are camping out, having pitched their tents on the common land. The recent severe weather has not, of course, been at all congenial to these people, but, as one of them remarked, "What is to be done?" Though the building trade is brisk at Garnant and Glanamman, there are scores of families in apartments, and the same conditions prevail at Ammanford. There is not a model lodging-house in the whole of the Amman Valley, and it is stated that no fewer than thirty of the tramping labouring class were found sleeping out at the brickworks and tinworks in the district. There is a great need for working men's cottages in the Amman Valley.

Colliery Ambulance Car.

Mr. E. Evans Bevan, J.P., presided at a lecture on "Mining in Many Lands," given by the Director of Mining Instruction under the Glamorgan County Council, on November 18th, at Seven Sisters. In the course of his introductory address the Chairman stated that he was prepared to present to the workmen of his collieries an ambulance car, with suitable stretchers. He would also keep a horse specially for the use of the car, and one of the workmen would have such duties as would enable him to be always available to attend to the horse and car in case of accidents. All he required in return was that men should train themselves in the ambulance classes, so as to become efficient to render proper first aid and keep the car in good condition. The usual vote of thanks was passed.

Natal.

The Coolie Question.

A report on ankylostomiasis, drawn up at the request of his authority by Dr. Burton Nicol, Medical Superintendent of the Indian Immigration Trust Board, has been issued. From a prefatory note, signed by the Secretary of the Board, it would appear that the Government of Natal, recognizing the detriment to the public health likely to arise from prevalence of the disease in question, issued last year instructions that all coolies brought from India under indenture to work in the colony found infected with ankylostoma should be relieved thereof before landing. This regulation imposed upon the Board a heavy expense owing to the detention of coolies for considerable periods, and it therefore decided to send its own medical superintendent to India to inaugurate a system for treating the coolies before shipment, and to obtain materials for a report on the whole question. The result is the document under consideration, which is somewhat lengthy, and not too easy to follow in its argument. A great many opinions are quoted on the subject, conveying the impression that the presence of ankylostoma in the human subject is not regarded by their authors as a matter of importance, and throughout the whole compilation the reader is invited to believe that cases in which only a moderate number of worms are present and those in which they are present in the intestine in such number as to produce obvious ill-health are totally different things. In this connexion it is stated that in India the great majority of the whole native population is infected with

ankylostoma, but that it is not usual for health to be affected thereby, or for the subject of ankylostomiasis to be regarded as of any particular interest now in that country or anywhere else. It is also suggested that cases of profound anaemia and other undesirable consequences of ankylostoma infection only occur in countries where the general conditions are favourable to the independent life of the parasite, and it is stated that such conditions do not prevail anywhere in Natal. As for the prevalence of ankylostomiasis in that country, it is argued that any belief that the disease constitutes just cause for alarm is merely due to misstatements born of malice or ignorance. If ankylostomiasis were spreading, the most drastic measures, it is admitted, would be justifiable, but coolies have been imported for many years past, and there is no evidence that the disease is more prevalent than formerly, and the death-rate from it during the past five years has been only 0.33 per 1,000. Finally it is pointed out that there are other ways in which ankylostomiasis may be imported into Natal besides the coolie trade, and it is suggested that if the medical and other officers of the board are forced to pay so much attention to ankylostoma, other undesirable conditions in coolies may be overlooked.

The report is admittedly written for the information of laymen, and has been printed for circulation among those interested, in the hope of allaying the alarm aroused in Natal by what has been said as to the dangers of a general prevalence of ankylostomiasis within its borders through the importation of coolies from India. In this direction it will doubtless have a considerable effect, but all the statements are not likely to pass unchallenged. With regard to the comparative unimportance of many cases of ankylostoma infection so far as the individual is concerned, it is true that since the ankylostoma does not multiply within the human body an individual who only has a moderate number of these parasites in his intestines may not suffer severely thereby, but the same individual may nevertheless prove capable of infecting with severe ankylostoma infection a whole village, should such village be not provided with well-kept latrine accommodation which is habitually used. There is also considerable variety in the nature of the conditions in which the ankylostome is capable of flourishing outside the human body, and the report contains no serious attempt to prove that suitable conditions do not exist within the area of Natal. The argument derived from death-rates is scarcely convincing, for it would appear that it was not until 1904 that any death from ankylostomiasis was ever reported at all; and it is not every one who would regard a death-rate of 0.33 per 1,000 from a freshly-recorded and avoidable cause of death as insignificant. The report, in short, certainly does not offer any grounds for accepting its author's statement that the Government of Natal has disregarded medical authority in this matter, or that the regulations which it has laid down on the subject are unjustified. It may be that there are other doors open for ankylostomiasis besides that which lets in coolies, but the administration can scarcely be blamed for endeavouring to close the largest of them. The responsibility on the shoulders of the medical advisers of the local government is very heavy, and in dealing with the disease they should be left free to choose among plans theoretically available that one which seems to them best suited in the precise circumstances of the colony. Their liberty of action is the more imperative since the report of the Immigration Commission does not appear to make any suggestion likely to lead to any material alteration in the existing control and supervision of coolie labour.

THE new botanical laboratories at University College will be opened on Friday, December 17th, by Dr. D. H. Scott, F.R.S. The Vice-Chancellor (Professor M. J. M. Hill) will preside. Applications for tickets of admission should be made to the Secretary, University College, London, W.C.

Correspondence.

MEDICAL RELIEF IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

SIR,—As one of those "who drive in a comfortable carriage or motor car," and who has been intimately acquainted for forty years with the miserable conditions of medical relief in the Highlands, may I be allowed to say a few words on the subject?

In discussing this matter there are two distinct questions to be considered, undoubtedly closely interdependent, and yet different. One is that of public health, and the other the professional position of our brethren who do the ordinary work of doctors amidst the struggling population in our far-off northern islands and on our stormy sea coasts.

The picture drawn by the Poor Law Commission, and even that painted by local medical men, is more sombre by a great deal than the facts warrant. Take the island of Lewis, to which Drs. Macdonald and Ross in their remarks particularly refer, and assuming, as we are bound to do, that the bills of mortality are the ultimate test of the sanitary condition of any population, and what do we find? I have gone over the returns for the last twenty years, and they show that the death-rate in Lewis per annum amounted on an average to the figure of 16.875 per 1,000 living, which every statistician must allow to be evidence of a very fairly satisfactory state of public health.

I quite grant there is room for much improvement in the ordinary condition of things in the Lewis. But is not that the case, taking the country all over? I also allow that isolation hospitals might be of advantage in checking the spread of some infectious diseases. On the other hand, unless accompanied by compulsory notification of measles and whooping-cough, their effect would be but small in the total mortality from *all* infectious diseases—these two forms of zymotic complaints adding many more to the death-roll than all the other notifiable diseases put together.

Turning now to medical aid. Let me say, first, that the number of uncertified deaths is no sure evidence of the dearth of such assistance. I know one parish where no less than six doctors at least could be readily called in. Here, in most years, 50 per cent. of the whole deaths occur without a single medical man having been in attendance.

The truth is, there is something altogether rotten in the present system of providing for medical and surgical attendance in certain "congested" districts of the Highlands and islands of Scotland.

I have used the term "congested." It really implies that the ordinary system of rate support—and along with it taxation and representation—do not apply, not only not to the point we are discussing, but to the ordinary support of the poor, and, as the Government allows, to the education of the children there in general.

Parliament must step in with financial help, and, as a corollary, Parliament must have a hand in the control and management, just as it already insists upon securing in the case of education.

The great desiderata, as you, Sir, point out, are, first, a proper house for the doctor, and, secondly, a sufficient salary. It is a disgrace to our profession that men—I confess, mostly young men—are found ready to apply for such posts for so miserable a pittance as is too commonly offered. And if older men are found willing to undertake the work, how is it possible to hope that they are likely to be all that their employers expect? Hence, in some measure, it must be allowed, lies the cause for dissatisfaction with their services and their dismissal, to the scandalizing of every one concerned.—I am, etc,

November 22nd. W. B.

A PUBLIC MEDICAL SERVICE FOR HAMPSTEAD.

SIR,—At a meeting of the local profession held on Saturday, November 20th, at the Central Library, Arkwright Road, under the auspices of the British Medical Association, and by the courtesy of the Libraries Committee of the Hampstead Borough Council, a public

medical service for Hampstead was successfully inaugurated by the adoption of rules and the enrolment of members.

The service is the outcome of an endeavour to co-ordinate upon a sound footing the contract medical work in the district, and to provide medical attendance and medicine for persons unable to pay the ordinary medical charges in the usual manner. The aim has been to organize a scheme which would be acceptable to the profession generally, with as little interference as possible with existing institutions, and to make it easy for clubs and provident dispensaries to affiliate themselves to the public medical service.

As this is a comprehensive scheme to put into medical hands the conduct and control of a variety of medical charity hitherto controlled by non-medical bodies, its progress will no doubt be watched with interest by medical men in all Divisions of the metropolis.

The work of organization has been very arduous, and the difficulties, as was to be expected, have been great, but not insurmountable by united effort. This preliminary statement will be followed by a more detailed account of the scheme, which might usefully and profitably be imitated by other metropolitan Divisions of the British Medical Association.—I am, etc.,

W. B. PARSONS,
Honorary Secretary, Hampstead Division, British Medical Association.

London, N.W., Nov. 24th.

STRESS AND SHOCK AS CAUSES OF INSANITY.

SIR,—I was greatly interested in reading a statement made in the last issue of the BRITISH MEDICAL JOURNAL: "At one time 'moral causes,' including shock or fright, took first place in the returns made to the Board of Lunacy among the etiological factors; to-day many medical superintendents return hardly any cases under the head of 'mental stress.' . . ."

Only those who are actively engaged in asylum work know the difficulties with which one has to contend in obtaining satisfactory histories in cases of insanity. In pauper asylums a large percentage of patients are transferred directly from workhouses, where they are often friendless and unknown, and, beyond a few bald statements regarding age and occupation given by the relieving officer, one has no definite data on which to base a conclusion as to the causation of these patients' mental diseases. Again, one is often surprised, when interviewing a near relative of a patient, at the ignorance displayed concerning such patient's parents or relations. Though evidence of insanity may not be wilfully withheld, there is always an inherent reluctance in admitting it. In attempting to obtain a history of syphilis—as in many cases one naturally cannot rely on the statements of an insane patient—a relative will frequently deny any knowledge of such infection. To cite a case in point: Some time ago I interviewed the widow of a general paralytic, at whose autopsy I found well-marked syphilitic lesions. She had been compelled to give up her work as a schoolmistress, owing to loss of voice. Examination showed that she was suffering from syphilitic laryngitis, yet she could give me no idea when infection had taken place, and had attributed her hoarseness to a bad cold. All medical men know the type of patient who, when questioned as to previous illness, will wax eloquent, and give an exhaustive epitome of his past ailments and their attendant symptoms; but, when attempting to extract useful information regarding the causation of an attack of mental disease, one often meets with the greatest difficulties, and I am certain that if more accurate histories could be obtained it would be found that shock and mental stress play a much larger part in the causation of insanity than is usually suspected.

I have recently had under my observation two cases that can certainly be classified under these two headings. A platelayer, employed on the railway, was struck by an express train and hurled up the embankment. He was found lying unconscious, with a compound fracture of the forearm, and conveyed to the infirmary. Whilst in that institution he became miserable and depressed, was subsequently certified and sent to the asylum, where he made a rapid and complete recovery. The other case was that of a young electrical engineer employed at a colliery. Having finished work, he was about to start home, when, in the absence of his "chief," he was summoned to attend an electrical coal-cutter that had broken down. He worked for twenty-four hours continuously before the job was completed, and, having no one in authority to appeal to in his difficulties, he was kept at high mental pressure all this time. He eventually returned home after working nearly thirty-six hours without rest, and, though physically fatigued and mentally worn out, he could not sleep. In the course of a few days he developed auditory hallucinations, which necessitated his removal to the asylum, where he recovered satisfactorily in a few weeks.

In both these cases, though the most careful inquiry was made into the personal and family histories, there was nothing other than shock and mental stress to account for their mental breakdown.

If any one cares to study the painful details and histories of many cases of suicide that figure so largely in the daily press, one cannot get away from the fact that mental stress is a most important etiological factor in the causation of insanity, and must be acknowledged by all students of mental disease.—I am, etc.,

GUY R. EAST, M.B., D.P.H.,
County Asylum.

Morpeth, Nov. 22nd.

THE INTESTINAL FUNCTION.

SIR,—As a general practitioner, I find the BRITISH MEDICAL JOURNAL very interesting, though it "takes one all his time" to keep up to it. I suppose there is no occupation of which it is more true that the worker must be a "perpetual student"; indeed, one of my acquaintances said to me, "We have to go to school again every week"! To me, at least, this is true: almost every number of the JOURNAL brings fresh light or, at any rate, helpful and suggestive observations upon one or more subjects of special interest to one's self; often upon the very case in hand one is most needing such help for.

For instance, in a recent number (July 10th) we have the original observations of Dr. Stacey Wilson on the colon. These are of special interest, for they undertake to describe, for the first time that I have seen, the *feel* to the clinical examining hand of the normal and abnormal caecum and sigmoid flexure. In interpreting these observations, Dr. S. Wilson invokes an entirely new theory of muscle action—namely, that at least the unstriped muscular fibres of the bowel both *push* and *pull*, that they can lengthen as well as shorten! If this becomes a substantiated fact it will have far-reaching effects, and its recognition should greatly advance our efficiency as practitioners.

A question I should like to ask is: Does not the large intestine in mankind consist of two portions—diverse in function, in anatomical and physiological relations, and in disease? I have proposed the names Colon and Omegon, the former comprising the ascending, transverse, and descending portions; the latter the so-called sigmoid flexure and the rectum. It would be very helpful if clinicians would bear this in mind, and observe and record any distinctions that can be demonstrated between, for instance, the caecum and the sigmoid in the light of this new theory of perverted muscular action. When I was a student in the London Hospital "perityphlitis" was in vogue; twenty years ago appendicitis got its innings, and latterly we have been learning much about the sigmoid—its angulations, stricture, diverticula, prolapse, and "peri-diverticulitis." Meanwhile the physiologists have been defining the functions of the alimentary tract and its various divisions, and unravelling its complicate and hitherto undreamt-of movements, by experiments on animals, and by the *x* rays. But do we even yet realize as we might the ideal, normal rôle of the so-called "large intestine"? I think if we had a clearer idea of the *normal* we could better observe and differentiate the *abnormal*, and I therefore wish to refer to my description of the human alimentary canal as five retort-like portions, in series: (1) The mouth and gullet (*laimon*); function, deglutition. (2) The stomach—fundus *plus* antrum (*gastron*); function, "digestion," primary, of the meal—the gastric "mill." (3) "Small intestine" (*enteron*); function, the main digestion, absorption, etc.—the most vital part. (4) Part of the so-called

"large intestine" (*colon*), corresponding to the "proximal" *plus* the "intermediate colon" of the comparative physiologists; function, secondary digestion, especially of vegetables, further absorption of water, etc., excretion—and the newly discovered vital relations, bacterial and lactic acid effects, good and bad. (5) The sigmoid flexure and rectum (*omegon*), the "distal" and "terminal colon" of authors; function, defaecation; also further excretion, and occasionally absorption. This last division of the human alimentary canal being a unique possession of mankind, its mode of action and normal functions cannot be learnt by experiments on animals, and I therefore welcome the new observations as a help to the endeavour to discover the true ideal site and rhythm of this, the most neglected and probably incompletely "evoluted"—if one may use the word—part of the canal. When we have thus discovered the normal, we may hope to be able to deal scientifically with the prevention and cure of the far too prevalent evil, constipation—a cause contributory to ill health and a condition of many diseases the number of which is continually being added to.—I am, etc.,

Leeds, Nov. 19th. J. Tregelles Fox.

A NATURAL EXPERIMENT IN CARDIAC STRAIN.

Sir,—I am indebted to Dr. Theodore Fisher for his frank statement of disagreement with my paper on cardiac strain in boys. Unfortunately, we appear to differ on matters of fact rather than of opinion, and this being the case, it is difficult to perceive any common ground for argument. There are, nevertheless, certain points in his paper which tempt a reply, and I can, moreover, justify some of the facts he disputes by evidence not included in my paper.

Dr. Fisher finds the size of the heart difficult to determine in children; he complains that the right "auricle is covered by lung, and continually emptying itself," and he has shown on several occasions in the *post-mortem* room that "dullness to the right of the sternum appears to be a deceptive factor in examination of the heart." On all these points I beg to differ from him. I hold that the size of the heart, in so far as the deep dullness represents this, is *not* difficult to ascertain in children; the lungs are not voluminous, as in the adult, the chest wall is thin, and *light* percussion well carried through with a single finger should enable any one with normal hearing and tactile sensation to outline the heart on the chest wall. I am aware that percussion is so badly and carelessly performed by many that the necessary accuracy is not to be expected, but so skilled a clinician as Dr. Fisher certainly does not fall into this category. The contractions of the auricle mentioned by Dr. Fisher seem to me to offer no more practical obstacle to percussion than do passing telegraph poles to the view from a train window.

As for the results of *post-mortem* examination, on which he relies, it is by this very proof that I have acquired confidence in the accuracy of heart measurement in children by percussion. If the deep dullness is carefully mapped out by this means and knitting needles inserted along its borders *at right angles to the surface*, it is astonishing how exactly the heart's outline may be traced. Since the chest wall is rounded and the heart's borders deep in the chest, it is, of course, obvious that the actual heart is not so large as its surface area of percussion. This fact might lead one to think on viewing a heart in an opened thorax that from its small size it could not have given any dullness to the right of the sternum. If this is the reason for Dr. Fisher's views, he will find on inserting needles as described, *at right angles to the surface*, that the surface outline of the child's heart commonly extends 1½ in. to the right of the middle line. That the surface outline is larger than the actual heart hardly impairs the accuracy of this measurement in comparing heart with heart, or the same organ with itself under other conditions, such as those of strain. In conditions of pigeon-breast, to be sure, the discrepancy may be too great to permit comparison with children of normal chest build, and such cases should be passed over.

Dr. Fisher goes on to say that to him "the most certain sign of the presence of dilatation of slight degree in the heart of the child is the appearance of murmurs." Here again, I fear, we entirely disagree. In my experience, apical murmurs are not uncommon in later childhood, are nearly always cardio-pulmonary (best heard just outside the apex), and bear no relation to cardiac dilatation. Any cardiac excitement will bring them out, they are common where hypertrophy is present, and where constant, may be, I think, due to pleural adhesions. True insufficiency murmurs I have only encountered in conditions of advanced dilatation. Systolic basal murmurs I regard as of still less significance. A rough pulmonary murmur can generally be produced by deep and prolonged expiration, and is not infrequently audible at the end of natural expiration in the healthy. Dr. Fisher seems to show, while speaking of these murmurs, some inconsistency with his incredulity, previously expressed, as to cardiac dilatation in children. He says: "Apical and basic systolic murmurs, although very common in quite young children, always indicate, I believe, the presence of dilatation"—an admission, surely, that cardiac dilatation is very common in quite young children, though he appears to doubt its occurrence in older children under stress. My own experience is the contrary, though I am far from holding that the lesser degrees of enlargement discoverable to skilled observation are necessarily of any practical import. I can but deplore, however, Dr. Fisher's implied encouragement of such adventures as a 20-mile walk and 600-ft. climb for girls of elementary school age and physique. I do not believe that such unaccustomed exertions can lead to anything but harm, and I greatly regret that the public can quote medical authority in favour of the continuance of such harmful excess.—I am, etc.,

London, W., Nov. 16th. Clive Riviere.

THE CRESCENDO MURMUR OF MITRAL STENOSIS.

Sir,—I could only add new material to the discussion on this question by referring to the highly-disputable arguments and deductions from cardio-vascular records by which the theory of the auricular systolic rhythm of the crescendo murmur is supported, many of these records, in my opinion, proving the opposite to that for which they are used. This would require more space than could be afforded by the correspondence columns of the Journal, which have already been largely occupied with the discussion, though not more so than the importance of the question at issue warrants, when it is remembered that nearly all the modern teaching as to the interpretation of the cardio-vascular phenomena of mitral stenosis depends in great part on the indisputable truth of the auricular systolic rhythm of the crescendo murmur.

I should, however, like to point out that I have always looked upon the ordinary mitral diastolic murmur as being "formed by blood being driven through the stenosed orifice, under those forces which fill the ventricle and by the contracting auricle (when it is able to join in),[1] and that this is not a recent admission, as Dr. Taylor suggests. Sir John Broadbent, as I understand him, confuses rising pitch with increasing force in his explanation of the causation of the former characteristic of the murmur. Dr. Samways discusses the question from a point of view which I do not feel competent to deal with. Although I fully appreciate the value of the criticisms on my work of Dr. Taylor and Sir John Broadbent, I think that I may claim to have shown that the auricular systolic rhythm of the crescendo murmur is highly disputable, and that there are some very strong arguments in favour of the early ventricular systolic, or presphygmic rhythm of the murmur. This means, of course, that any teaching based on the former theory must be received with due caution.

In conclusion, I should like to correct an error in my letter to the Journal of October 23rd by which I wrote "Dr. Roberts" for "Dr. Taylor." Having been brought up on textbooks by Dr. Frederick Roberts and Dr. Frederick Taylor, and always associating the two names, I carelessly wrote one name for the other and overlooked the mistake in proof.—I am, etc.,

Manchester, Nov. 21st. E. M. Brockbank.

[1] British Medical Journal, August 28th, 1909.

INTERMITTENT CLOSING OF CEREBRAL ARTERIES.

SIR,—Several letters have appeared expressing agreement with or acquiescence in the views contained in a post-graduate lecture on the above subject which was published in the BRITISH MEDICAL JOURNAL of October 16th, while in your issue of November 20th one letter has appeared from a writer holding other views. I thank your correspondents, and assure them I was interested in the points they dwelt upon. I have particularly to thank Sir Lauder Brunton for his courtesy in sending me a copy of the interesting pamphlet he referred to in his letter.

It may, I think, remove some misunderstandings if I state that the first paper I wrote on this subject was read at the Medico-Chirurgical Society of Edinburgh on May 1st, 1901, and was published in the *Transactions* of the Society and also in the *Lancet* of June 1st, 1901. Since then papers bearing upon the subject have appeared under my name in the BRITISH MEDICAL JOURNAL, the *Practitioner*, and the *Lancet*. At the end of 1907 Messrs. Green and Sons, Edinburgh, published my book on *Arterial Hypertonus, Sclerosis, and Blood Pressure*. In that book I discussed at greater length than was possible in a lecture, and gave examples of, varied cerebral manifestations which, I submitted, could only be satisfactorily explained on the hypothesis of local spasm of cerebral vessels. The strong support given to this hypothesis from observations made on retinal arteries is dealt with there, although Mr. Priestley Smith's observations are only indirectly referred to.

With regard to Dr. Parker's letter in the JOURNAL of November 20th, I would assure him that I have long been fully conversant with the views he represents and expresses in his letter. For the explanation of many clinical phenomena referable to the brain I consider them entirely unsatisfactory. Dr. Parker will find the subject dealt with at some length in the book referred to. The hypothesis continues to gain support not only from my own experience, but from the assurances I have had of the practical value of it when intelligently used as a guide to treatment.—I am, etc..

Edinburgh, Nov. 20th. WILLIAM RUSSELL.

THE BLACK DEATH.

SIR,—I am much obliged to your reviewer for his courteous reply. Such a formidable army of recognized historians must be enough to frighten any one who was not possessed with a large amount of filial piety, and I must admit he has scored a point; but if he will allow me, I will try and prove that his last sentence in reply is not borne out by my father's writings. His contention was, I believe, that the question of labour and wages had a far greater influence in the formation of history than most students believed, and his conclusions stated in his books and reprinted lectures were come to from his unique collection of facts published in his *History of Prices and Agriculture in England*.

As your reviewer says, the references of the Black Death are scattered through his writings, and only deal with the economic effects that followed, may I ask him to give further study to my father's writings, and suggest that he might turn to p. 263 of the *Economic Interpretation of History*, where he will find that the Black Death "emancipated the serf and it demoralized the Church. It gave occasion to the teaching of Wiklif, and assured the Reformation." These incidents are more than economic ones.

Chapter VIII, in *Six Centuries of Work and Wages* (published 1884) will repay your reviewer's attention, where the emancipation of the serfs is more fully treated, and reference is made to the decline of morals and learning among the secular and regular clergy, both in this country and in Italy and France. "The Black Death formed an epoch" (p. 224) must refer to something more than the relationship between the employer and labourer.

It is, perhaps, not unnatural that a book that treats with the history of six centuries should have only scattered references to one great event, but the whole of one chapter out of twenty is devoted to the great famine of 1316 and the plague of 1348.

As a third reference, vol. i of the *History of Prices and Agriculture*, published in 1866, will show that my father was fully alive to the effects of the Black Death. One quotation is enough: "In England it forms an era in the history of personal and political freedom." Surely these are more than economic effects. And as a fourth may I ask your reviewer to turn to a small book, *The British Citizen*, published in 1885, Chapter XII, entitled, "The Events which Assisted the Serf."

It is not for me to cross swords with your reviewer on what does or what does not make history; whether social and economic advances have made England what it is; or whether wages and labour constitute the whole life of the people. Suffice it to say that the main effect of the Black Death was to destroy feudalism in this country, and created a class of owners of land from which the great middle class, the backbone of England, has sprung.

I will concede to your reviewer that his array of historians have overlooked the point in question, but I am afraid my filial piety still makes me believe that my father had anticipated Abbot Gasquet in recognizing that the Black Death was the "turning point of our national life."—I am, etc.,

Clifton, Bristol, Nov. 21st. BERTRAM M. H. ROGERS.

SIR,—It is, I fear, undeniable that historians, as a rule, have given but scant attention to the importance of the Black Death, as to its influence on the general evolution of the race. This has now been prominently brought forward in a comprehensive manner by Abbot Gasquet. At the same time, I think most of the separate factors of this influence have been discussed, not by writers on general history, but by those who have taken up special branches. Its effect upon the relations between capital and labour, it is true, were those chiefly insisted on by Professor Rogers, and afterwards by Brentano (Preliminary Essay on English Guilds), and C. Walford; but there have been other references which were not entirely confined to the economic aspects of the plague. Hecker, the author of *Epidemics of the Middle Ages* (published by the *Old* Sydenham Society), also wrote a separate monograph on the Black Death, in which he draws marked attention to the mental and moral effects of the epidemic on the nations of Europe; and although I cannot claim to have written a history, I have, more than a quarter of a century ago, in a paper on Pestilences: Their Influence on the Destiny of Nations,[1] devoted several pages to this very subject—namely, the tremendous effect of this particular outbreak on the religious life of this and other countries, and its importance as a factor in the Reformation of the Church, as well as its effect on European literature.—I am, etc.,

London, S.W., Nov. 19th. J. FOSTER PALMER.

⁂ It should have been stated that the first edition of Abbot Gasquet's book appeared in 1893.

COLDS AND THE HARDENING PROCESS.

SIR,—In your note (p. 1488) I fear that there are several statements which might induce your readers to believe that for delicate individuals and children the hardening process is not to be advised. In what I take to be an editorial comment you state "there is no reason why robust adults should not follow their beliefs and inclinations in this matter, but for adults who are not robust and for children the hardening process is not free from risk." Surely, the open-air treatment—a special application of the "hardening process"—is the most efficacious of all hygienic methods for the treatment of phthisical cases, and phthisical patients can hardly be described as robust. Further, in the treatment of children, and even of quite young infants, there is no procedure that gives such eminently satisfactory results in the prevention of chills, colds, bronchitis, and cold feet, as the systematic training of the heat-regulating and vasomotor mechanisms by carefully graduated exposure to variations in temperature. Infants, children, and non-robust individuals represent, in fact, the very classes which should be selected for treatment by the "hardening" method, the first two because they can be so easily educated and the latter because their want of robustness is often determined by their incapacity to accommodate themselves effectually to changes in temperature.

The hardening system is often condemned by medical men and others who have taken no opportunity to study

[1] *Transactions of the Royal Historical Society*. New series. Vol. i, pp. 247–252.

the inestimable benefits that can accrue when the educational regimen is applied in a rational and scientific manner.

The co-ordinated distribution of blood to the various organs or parts of the body, in accordance with the physiological requirements obtaining from moment to moment, is the combined duty of the vasomotor and heat regulating centres. These centres, though automatic in action, must be trained and educated; for instance, at the time of birth the infant is practically a cold-blooded animal; that is to say, its temperature falls and rises in a manner more or less parallel with that of the surroundings. But despite the haphazard experiences in temperature variation to which they are normally exposed, these centres soon attain to a fair degree of functional efficiency. If, however, the early lessons in thermic education are systematically applied, the efficiency of the mechanism is correspondingly increased. All who doubt this statement can easily convince themselves of the truth by trying the simple experiment of reducing the temperature of an infant's bath by one degree each day. At the end of a few weeks the stability of the vasomotor and heat regulating mechanisms will have improved in a very remarkable degree, as can be proved by the use of the clinical thermometer or by any other test that suggests itself to the experimenter.

To imagine, however, that exposure of one part of the body—say the legs or head—and envelopment of the rest in cotton-wool, or the sudden application of the cold bath, constitutes a hardening system, is a very unfair interpretation of a genuinely valuable mode of treatment. Any violent or sudden temperature stimulus must dislocate, at least temporarily, so delicate a nervous mechanism as the heat-regulating centres. The more violent the stimulus, or the more inefficient the centre, the greater will be the disturbance produced. I take it, when we speak of "chill," we mean nothing else than the temporary disorganization of the functions of the heat-regulating centres by the supermaximal stimulation of cold. We certainly ensure against such dislocation by the scientific application of the much-abused "hardening system."—I am, etc,

London, W., Nov. 19th. ERIC PRITCHARD.

AMBULANCE LECTURES AND VOLUNTARY AID DETACHMENTS.

SIR,—I have an invitation card and two pamphlets before me marked with the Red Cross. I received these on October 18th as a form of advertisement, since my name was not placed on the card of invitation. The two pamphlets (*a*) The British Red Cross Society, Medical Organization in Case of Invasion; (*b*) British Red Cross Society, Hampshire Branch, Voluntary Aid Detachments, Territorial Forces.

Being a member of the medical profession, a specialist, and, not least, the Vice-Chairman of the Winchester Division of the British Medical Association, I dislike this unethical way of soliciting my professional services. Already I have given my services voluntarily to the Royal Army Medical Corps, but I have no intention further of lecturing during the time of peace to the Territorial Army without compensation, that is, without a professional fee. I am not enamoured of the present military system, and will feel uncomfortable when the invasion occurs. Thus it is obvious I advocate conscription or some modification of it.

The remarks of the Representative of the Cleveland Division on ambulance lectures and voluntary aid detachments in the issue of November 6th, and also a criticism by another writer in the following week's publication, deserve the close attention of this great organization, the British Medical Association. The voice of this body of the profession is heard wherever British medicine is practised. Its backbone is solely the hard-worked, generous-hearted general practitioner. The British Empire would collapse without him, and in more ways than being dependent upon him for professional services.

All post-graduate work requires time and money, and if gentlemen in the R.A.M.C. and I.M.S. are allowed this, why should not the same be extended to the civil members of the profession? When we consider these days of stress and competition, with their attendant annoyances and discomforts, human nature will step in, since the law of self-preservation is at stake.

The exploitation of the profession of medicine by all sections of society is a growing evil in all its departments. The time has arrived for us to assume the defensive and make an appeal to our professional countrymen. If no bill of the State is at hand to protect us, then we must take guard. We must oppose the assaults of the charlatan, and complain to our government, the British Medical Association. It is time for us to demand a regular wage, and not accept, as we do, a half-hearted coin of the realm in return for our skilled services. As a body of gentlemen we are as strong as the House of Lords; and, as an intelligent educated class, able to dispute by eloquence of speech the tongue of the House of Commons.

The State in this country systematically employs and engages members of the profession into the military service. It pays them a good wage and gives them a varied life, and at the end provides for their old age in the way of a pension. Compare this with the lot of the civil practitioner. The idea, then, of the military authorities seeking voluntary aid from the civil members of the profession is at once false and yet peculiar to military manners—sentimental. If the army medical officers are worthy of their pay, so, I contend, are civil medical officers in general. In a few words, every man is worthy of his hire. If army medical officers are not allowed to starve, why should their professional brethren on the civil side? It is a false, illogical, sentimental argument to expect the civil medical gentleman to give his services to the State for no pay, when, on the other hand, his military-clad professional brother is getting good pay for the same. I beg to support the discussion, and I feel sure I shall have followers in my Division.—I am, etc.,

THE VICE-PRESIDENT, THE WINCHESTER
November 17th. DIVISION.

THE POOR COUNTRY DOCTOR.

SIR,—Allow me to call attention to two matters that are of considerable importance to country practitioners. The dispensary doctor is the leading element in both. The first is the readiness with which dispensary men allow themselves to be used by the police authorities in the matter of sudden calls. At present if any police case turns up the dispensary man is sent for by the police authorities without any legal ticket whatever, and hurried off, it may be, in the middle of the night without fee or reward. The usual prompt attendance of the dispensary man is in the majority of cases inexcusable, for in such there is no prospect of any future gain. In a small percentage of cases there may be such expectation, but why should they go for nothing on the strength of future expectations? It is undignified and unprofessional, it is monstrous that the police authorities should be aided and abetted in carrying out their high-handed rule in this respect. Quite recently I am aware of their invading the grounds of a public institution provided with a doctor of its own and deposing the latter in favour of their own nominee. The friendly relations between the two medical gentlemen rendered public personal criticism impossible.

The other matter is the stark-naked ruin which not merely threatens but has laid the icy hand of Death on the incomes and status of the entire country medical element. Here the dispensary man, too, is the sinner by sending up all his well-to-do patients to homes and hospitals in Dublin, London, and other big places. There is a certain percentage of surgical cases whose rarity makes metropolitan hands necessary, but outside these the parties could be as well atended to in the country, and their being sent off is solely due to the most short-sighted of jealousies. "Dispensarian" deprives himself of his patient rather than bring in a local consultant. Would the dispensarii reflect on this, and if they do they will realize their folly.—I am, etc.,

November 16th. MEDICUS HIBERNICUS.

THE PROFESSION AND THE STATE.

SIR,—I, in common with about fifty other medical men, accepted the invitation to meet the direct representatives on the Medical Council at St. James's Vestry Hall last Monday. The usual failure to square the circle resulted, and again was demonstrated to a certainty the impossibility of a body like the Medical Council, whose interests are academic, being able intelligently and sympathetically

to comprehend the disabilities under which the general practitioner daily struggles. Our representatives had to hark back thirty years to find material on which to raise a discussion. We were asked to congratulate the Council on its success in preventing the spectacle sellers exhibiting a pseudo qualification after their names; but, Sir, the spectacle seller and eye tester still exists in multitudes of jewellers' shops now. The bone setter still flourishes abundantly, although the Council still will not allow him to flourish any letters after his name; and the herbalist is not yet extinct. Hospital reform is still untouched, and now that the out-patient department is patronized by Royalty it will no doubt soon become a fashionable lounge.

It is an established and incontrovertible fact that no body of men have ever had any moral force or political influence until they have welded themselves into a union with parliamentary representation; social laws are as true as the Darwinian hypotheses, and the sooner we recognize these facts the better.—I am, etc.,

London, S.W., Nov. 23rd. JOHN FLETCHER.

THE ROYAL COLLEGES AND THE UNIVERSITY OF LONDON.

SIR,—The three sections that follow give the working points, or an *Explanatory Rider*, to the resolution of the Fellows and Members of the Royal College of Surgeons of England for the junction of the Royal Colleges with the University of London (p. 1583).

1. The Royal Colleges should formulate a definite *policy*, place it before the Senate and the Royal Commission, so as to help to institute a complete medical faculty for London. And they should be prepared to apply for a charter for the union with the university.

2. The "*Part*" of the colleges, referred to in my resolution, was to uphold the first agreement with the university to reciprocate certain conjoint medical examinations under the University Act. It could give the respective titles of M.B., M.R.C.S., and M.B., B.S.; and with an extended examination or thesis for the M.D. The Fellowship class of F.M. or F.S., and the Honours class of M.D.Hons., could both be retained, at least at first. The matriculation, too, of both sides would have to be accepted in London for a provisional period. But after these provisional years had expired, the consolidated university regulations would have to be conformed to. Now, as the Act of Parliament and the clauses under which power is sought cannot possibly apply *only* to the Senate of the University, I do think, if any opposition be improbably encountered, that the Royal Colleges of Surgeons and Physicians may enforce it in a High Court action. The question of the retention of the presidents and councils as managerial officers might be asked for, and, being the historic councils to promote this Great Reform, they ought to remain, but after the transition the voting could be left to the votes of the university.

3. The junction of the Royal Colleges with the University of London, also referred to, was meant to emphasize the one essential point—to offer the whole of the Royal Colleges of Surgeons and Physicians to the University authorities with terms. Any further support and expenses would be defrayed by the University with a Governmental grant or subsidy, and which, so far, they alone have received whilst the collegiate members have not.

Late alternative schemes still continue to be launched. The worst mire of Pluto's Hades used to be allocated to such plagiarists, but in these rapid days all too many evade the old gentleman's attentions at the gate. The old idea to join only University and King's Colleges to the Royal Colleges and University, is altogether too late. They have already been quite capable of looking after their own junction, so that idea is supererogatory. Besides, all the hospital schools have an equal claim to be included as schools in the combined medical faculty; and they, therefore, are more identified with the claim of the Royal Colleges. Again, it is beneath serious notice to suppose that, as degrees are accessible elsewhere, therefore London students *must* seek them abroad. Foreign degrees amount to merely cramming, and are not registered in England. So the only course open—and the Senate of the University is perfectly able to evolve a plan—is to meet this absolutely necessary provision of a university course for the medical students of London, instead of forcing them abroad or to the provincial universities. The latest jumble by a patriarchal warden of the Society of Apothecaries for its few students relies on the sudden and phoenix-like structure of a universal Government university. Their sham university, like themselves, may perhaps remain one of the old landmarks, but, none the less, a fading institution, and unadapted, but, unlike the Royal Colleges of Surgeons and Physicians, on the other hand, who are for a substantial part in the reformed medical faculty in a combined University of London.—I am, etc.,

Bognor, Nov. 20th. H. ELLIOT-BLAKE.

LONDON HOSPITALS AND SCHOOL CHILDREN.

SIR,—Mr. E. Rowland Fothergill has written to me calling my attention to his letter to you of November 8th (BRITISH MEDICAL JOURNAL, November 13th, p. 1439), which I had not seen. In answer to the first portion of his letter, perhaps it would make the matter clear if I explained that the *modus operandi* of the London County Council in regard to the school children is as follows: After examination by the London County Council medical officer, if it is found that treatment is necessary either for eye, throat and ear, or skin diseases, the parents are notified; if, however, the parents neglect to provide such treatment either through their own private practitioner, or other sources, the London County Council make inquiries, and if they find the parents are unable to provide the necessary treatment, send such children on to the various hospitals with whom they have made arrangements for treatment. In the case of St. George's Hospital, and doubtless in the case of other hospitals as well—but I am unable to speak from actual knowledge—we have reserved the right to make any inquiries we may think fit for ourselves in the case of any children sent, and if it were found that the parents were in a position to pay, representations would immediately be made to the London County Council on the subject.

In regard to the second portion of his letter, if Mr. E. Rowland Fothergill will kindly give me the name and address of the patient to whom he refers, I will inquire into the matter and let him have an answer, but obviously I cannot trace the case without more particulars.

I much regret that such an expression as "Such instances occur almost every week" should be used. It is unsatisfactory to all concerned, and I would ask your correspondent to be more particular if he expects me to take notice of such statements. In all cases where it is known a patient has been attended by a private practitioner he is written to by the Almoner and asked with regard to the case before they are finally accepted for treatment. Obviously many conceal this fact from us, and if Mr. Fothergill was not written to he may be sure the fact was not known. The governors of St. George's Hospital have always done their best to prevent abuse of the institution, and were one of the very first to start an almoner department, and deserve, I think, something more definite than a statement of this kind, which is calculated to give an entirely wrong impression.—I am, etc.,

A. WILLIAM WEST,
Treasurer and Chairman of St. George's Hospital.

London, S.W., Nov. 24th.

Public Health
AND
POOR LAW MEDICAL SERVICES.

DISINFECTION OF CLOTHING.

M. O. H.—Upon a strictly literal interpretation of Section 120 of the Public Health Act, 1875, and of Section 6 of the Infectious Disease (Prevention) Act, 1890, a sanitary authority could no doubt require clothing, etc., which had been exposed to infection but had been subjected to disinfection, to be again disinfected, but it would be unreasonable for the authority to do so if the medical officer of health had certified that the clothing, etc., had been efficiently disinfected.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual meeting of the Fellows and Members of the Royal College of Surgeons of England was held on November 18th at the College, the chair being taken by the President (Mr. Butlin).

The President placed before the meeting the report of the Council for a period from August, 1908, to August, 1909,[1] and in the course of his remarks on it referred to the proposed combination of the College with the University of London to secure a degree in medicine for the average London medical student. The College, he said, would do all in its power for the benefit of students in the metropolis, and would give evidence before the Royal Commission on University Education in London which had been recently appointed. In regard to the admission of women to the Membership and Fellowship examinations, the necessary alterations had been made in the by-laws, and had been approved by the Home Secretary. The President also referred to the efforts made to secure payment to medical men called in by midwives in cases of emergency under the Midwives Act, and he expressed his opinion that the existing condition of things in that respect was a great hardship on medical men.

Dr. W. G. Dickinson referred to the paragraph of the report in which the following words occurred: "The property of the College is not vested in the existing Members, but in the body corporate." He asked the President for a definition of the term "body corporate." Was it a "spook" or some sort of imaginary body to be alluded to when convenient?

The President replied that the "body corporate" was the past, present, and future Members of the College.

Dr. Dickinson then asked if the proposed scheme with the London University had fallen through.

The President said that the scheme of the proposed combination with the University of London had not fallen through, but it appeared that the Senate of the University of London was not inclined to do anything in the matter while the present Royal Commission on University Education in London was sitting.

Mr. F. Collingwood asked for a statement as to whether the question of the Members of the College having a part in the administration of the College had ever been before the Council.

The President replied that the question had been before the Council on more than one occasion.

Mr. Joseph Smith then moved:

> That this twenty-fifth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council, which as now constituted does not represent the whole corporation; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

He said that his motion had been before the meetings of the Fellows and Members for the last twenty-five years; it had been carried in most cases unanimously, and in other cases with a very small minority voting against it. The motion was supported, not only by the Members of the College, but also by a vast number of enlightened Fellows. It must be quite clear to the Council that the condition of things was such that it could not possibly continue. It was absolutely wrong that some 17,000 Members of the College should be ostracized in the manner that they were at present. The Council received the resolution of the Members year after year, and replied simply with a *non possumus*, giving no reasons whatever for their conduct. In the British Medical Journal a letter had recently appeared in which a clear and broad statement of the position was put forward by a writer who signed himself "Fiat Justicia Ruat Coelum." He trusted that that motto would guide the President of the College when he retired into the Council chamber and considered the motion that he (Mr. Smith) was putting before the meeting.

Mr. Collingwood, in seconding the motion, pointed out that medical students had been driven away from London to study for their medical degrees in provincial towns.

Dr. W. H. Day asked where the College would be without its Members who provided the income. The time had come when the 17,000 educated men who were the Members of the College would be forced to appeal to Parliament or otherwise bring influence to bear to demand justice.

Dr. S. Wilson pointed out that if the Council granted seats to four of the Members of the College on the Council, then the disabilities and complaints of the Members could be brought to the notice of the Council.

Mr. H. Elliot-Blake spoke in support of the motion, and Mr. C. C. J. Wilkinson declared that the Members were neglected by the College, giving a sad description of the hard conditions of life in which a large number of the Members of the College were working.

Mr. S. W. Owen pointed out the disability under which Members of the College laboured in courts of law when giving evidence, by reason of the fact that juries were continually being told that Members of the College were not doctors.

Mr. W. W. Stocken said that the membership question would settle itself by the gradual extinction of the College, unless something were done to stop medical students going to the provinces, where they could get a degree in medicine.

Dr. Dickinson said that the question was not whether the Members would be represented or not on the Council, but it was when that representation should come into effect.

Mr. Joseph Smith's motion was then put to the meeting and carried *nem. con.*

Dr. A. S. Morton then moved:

> That, in fulfilment of the promise made by the President of the College in 1906, this meeting strongly urges the Council to impress upon the Government the necessity of amending the Midwives Act next session, in order that provision may be made to secure just remuneration for professional services rendered by medical men under this Act.

He said that unless the College had supported the Midwives Act it would not have become law. The members of the Council did not practise midwifery; if the members of the College had representation on the Council it would be able to learn the true condition of affairs.

Mr. Day seconded the motion, and Mr. Stocken, in speaking in support of it, said that in his practice midwifery cases had dropped from 100 a year to 17 in consequence of the passing of the Midwives Act. The practitioners were called in to the difficult cases and received no payment.

Mr. Collingwood said that the responsibilities and the expenses of the general practitioner were increasing without any corresponding addition to his remuneration.

The President described his early experiences as an assistant in a country practice when he attended midwifery cases. He had been informed by the Chairman of the Central Midwives Board that now was the time for the College to send in representation to the Privy Council to say that the College approved of the recommendation in the report of the Departmental Committee on the working of the Midwives Act. The opportune moment had arrived for the Council to approach the Government to press forward the question of the payment of medical men called in by midwives under the Midwives Act; and he assured the meeting that it was fully recognized that it amounted to a misfortune to the whole country that medical men were not paid when called in by midwives. The President concluded by stating that he would bring the subject before the meeting of the Council in December.

The motion proposed by Dr. Morton was then put to the meeting and carried.

The following motion, proposed by Mr. H. Elliot-Blake and seconded by Mr. Brindley James, was carried:

> That the Council of the Royal College of Surgeons of England, through their Joint Committee of Delegates, and when it is found necessary, and in any agreement with the Royal College of Physicians of London, be asked to approve of and promote a new charter and Act of Parliament to incorporate the Royal Colleges of Surgeons of England and Physicians of London so as to form Royal Colleges or parts of the University of London.

UNIVERSITY OF CAMBRIDGE.

Professorship of Biology.

The Council of the Senate will on Monday, January 17th, 1910, proceed to the election of a professor of biology in succession to Professor Bateson. Applications must be made to the Vice-Chancellor on or before January 10th, 1910.

A Laboratory for Experimental Psychology.

The special board for Moral Science has called the attention of the Senate in a report to the need of more adequate accommodation for the laboratory of experimental psychology. At present, the report states, this department is housed in a damp, dark, and ill-ventilated cottage at 16, Mill Lane, the property of the Syndics of the University Press, who allow the department to occupy it. It is estimated that a building adequate for the present needs of the department might be erected at a cost of £3,000, and equipped for £1,000 more. Provision for the cost of maintenance, estimated at £1,0000, is also necessary. Towards the amount required nearly £3,700 has been already promised or paid, but this includes an offer of £3,000 made on condition that the building is begun without delay.

[1] This report was noticed in the British Medical Journal of November 6th, p. 133.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., B.S. (*Honours*).—†E. M. A. Duvivier, Guy's Hospital; †G. Jefferson, Victoria University of Manchester; †G. H. Peall, Guy's Hospital; *†H. Platt (University medal), Victoria University of Manchester; *W. R. Thomas, Charing Cross Hospital; †E. F. G. Tucker, London Hospital; *J. W. J. Willcox, University of Bristol.

* Distinguished in medicine. † Distinguished in surgery.

THIRD M.B., B.S. (*Pass*).—M. E. Ball, R. P. Bailard, Ella M. Barker, A. Bernstein, B. Biggar, Anne Borrow, H. L. Burton, H. D. Clementi-Smith, A. Davies, M. R. Dobson, R. C. V. Edsall, A. O. English, E. L. Fyffe, A. A. Greenwood, D. J. Harries, C. R. Hoskyn, W. S. Hughes, M. L. C. Irvine, W. B. Johnson, J. E. L. Johnston, R. H. H. Jolly, B. A. Lloyd, G. G. Lyttle, E. L. W. Mandel, E. W. Matthews, E. R. Morley, J. S. New, A. H. Penistan, W. J. Petty, C. J. Rogerson, F. C. Searle, C. W. Shepherd, G. R. Strong, J. B. Tackaberry, Margaret G. Thackrah, B.A., J. R. H. Turton, B. R. Vickers, Gladys M. J. Watts, H. O. West, R. T. Williams, E. W. Witney, C. I. Wright, S. Wyard.

THIRD M.B., B.S. (*Group I only*).—J. A. Atkinson, A. D. E. Bayliss, H. W. Catto, Ethel M. Connan, Nina G. Cotton, J. P. Elias, E. L. Elliott, W. M. Feldman, Dossibai R. C. Patell, W. L. Pink, A. H. Pollard, G. Price, S. I. Rabbinowitz, E. E. A. T. Rigg, H. D. Rollinson, R. H. Wilshaw.

THIRD M.B., B.S. (*Group II only*).—Mary H. Atherton, G. H. Chisnell, P. C. Conran, R. L. Crabb, J. R. B. Dobson, D. Green, A. R. Jones, D. Kennedy, J. S. H. Lewis, J. P. Little, Ethel M. Morgan, H. O'Meara, A. B. Porteous, G. F. R. Smith, T. Stanfield, N. Tattersall, G. O. Teichmann, W. Weir.

VICTORIA UNIVERSITY OF MANCHESTER.

MEETING OF UNIVERSITY COURT.

AT the last meeting of the Court, under the presidency of Vice-Chancellor Hopkinson, sympathetic reference was made to the late Alderman Thompson, and a resolution was passed expressing the Court's high sense of the great value of the long and devoted services of Dr. Thompson rendered to the Owens College and the University in the office of Treasurer for more than twenty years.

Report of Council.

Sir Frank Forbes Adam then presented the report of the Council for the past year. Allusion was first made to the way in which the work of the departments had been hampered by want of space and accommodation and by deficiency of apparatus. The old difficulty was want of funds, and the Council had decided that among the many claims on it the most urgent was that of the chemical department. The new laboratories opened in October were well up to date and satisfactory in every way. The cost had been met by the munificence of Mr. Carnegie and other generous contributors, but still more was needed for equipment. The new engineering laboratories, opened last July, also wanted more equipment. Reference was then made to changes in the staff, including the retirement of Professor Boyd Dawkins and the appointment of Sir T. Holland in his place, and also the retirement of Professor Young, who had been succeeded in the Chair of Anatomy by Dr. Elliott Smith. Among the new developments was the establishment of a Chair of Cryptogamic Botany, a Department of Agriculture, a Lectureship in Experimental Psychology, tutorial classes for work people, courses for journalists, and classes for Bible students. Last year the total number of students was 1,419 and this year 1,518, an increase of 99. The university contingent of the Officers' Training Corps had increased from 111 to 175.

In supporting the report, Sir Wm. Mather said that already excellent original research had been done in the engineering department, for which accommodation was not possible before. The physical laboratory, established a few years ago under Professor Schuster, had also developed enormously. In the chemistry department there was no branch of chemistry that was not now provided for in proportion to the number of students.

Financial Report.

Mr. Broadfield, Treasurer, presented the financial report, which showed that the expenditure had increased from £67,399 to £73,120, but the receipts had increased at about the same rate, and the balance of income over expenditure was £21, against £42 last year. The total assets now amounted to £1,268,285, an increase on the year of £111,191, mainly accounted for by the inclusion of sums given by the late Mrs. Rylands, Professor Barker, Mr. G. Harrison, and Mr. Carnegie. Professor Barker's bequest was £23,000, and was left for the foundation of the chair of cryptogamic botany now occupied by Professor Lang. Professor Barker's success as a lecturer in the university was shown by a list of the brilliantly successful men that studied under him in mathematics. Among these were Sir J. J. Thomson, Dr. Horace Lamb, Dr. A. Schuster, and the late Dr. John Hopkinson. The report was adopted.

Election of Governors and Members of the Council.

The following governors were reappointed: Sir H. Roscoe, and Messrs. T. G. Ashton, H. L. Behrens, H. J. Goldschmidt, and Walter Whitehead; while Mr. V. K. Armitage was elected in place of the late Alderman Thomson.

Mr. H. H. Smith-Carrington and Mr. A. C. Maberley were elected to fill vacancies as members of the Council, and the following were reappointed: Sir Frank F. Adam, Mr. H. L. Behrens, Mr. J. F. Cheetham, Sir Ed. Donner, Mr. Alfred Haworth, Alderman Goldschmidt, Mr. Ivan Levinstein, and Mr. Wm. Thorburn.

Honorary Degrees.

A resolution was unanimously adopted to confer the degree of D.Sc. on Professor Boyd Dawkins for the distinction he had achieved in research in prehistoric and Roman archaeology. It was also resolved to delegate the authorization of honorary degrees in future to the Council.

Evening Courses.

Dr. Schuster then presented a report of the Senate on the question of evening courses as qualifying for degrees, and he proposed:

> That the Court is of opinion, having regard to the report of the Senate and the facts stated in the appendices, that it is not desirable at present to take steps for the institution of courses of study in the evening leading to degrees in arts, science, or technology.

He said there were great differences of opinion as to the advisability of instituting degrees for evening students, but leaving the abstract question as to whether it was desirable or not, the practical question to be considered was whether, balancing the advantages and disadvantages, the great expenditure necessary should be incurred. The Vice-Chancellor said that the Court was bound, in face of the facts, to agree with the Senate. The failure of other universities in any such scheme showed that Manchester would not be warranted in undertaking it at present. The case of commerce was quite different, for in this the practical work was done in offices of all kinds, in banks, and other places, and there was no difficulty in having evening classes. The university would also be willing to institute high-class instruction in any subject for which there was a demand. The resolution of Professor Schuster was unanimously carried.

Department of Agriculture.

A resolution was also carried appointing an advisory committee on agriculture. To carry on this work the university had combined with the Cheshire County Council, and students would have six months' practical work on a farm alternating with six months' work in the university.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B., B.A.O. (*Medicine, Part II*).—*A. A. M'Connell, *B. H. Moore, P. H. Lemass, W. R. Watson, L. Trichard, E. B. Bate, R. E. Lee, J. D. Murphy, H. S. Metcalf, C. H. Denham, W. H. Hart.

FINAL M.B., CH.B., B.A.O. (*Surgery, Part II*).—*H. Müller, *J. W. Flood, Beatrice M. Hamilton, P. H. Lemass, A. A. M'Connell, R. E. Lee, J. E. N. Ryan.

* Passed on high marks.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been appointed in the subjects indicated:

SURGERY.—*†B. T. Lang.

MEDICINE.—*†S. Danziger, *C. J. Thompson, *†T. A. F. Tyrrell.

FORENSIC MEDICINE.—S. Danziger, C. P. A. de L. Pereira, T. A. F. Tyrrell.

MIDWIFERY.—S. Danziger, W. H. Watson.

* Section I. † Section II.

The diploma of the Society has been granted to Mr. T. A. F. Tyrrell.

The Services.

ROYAL ARMY MEDICAL SERVICES.

EXAMINATION FOR COMMISSIONS.

AN examination for not less than five commissions in the Royal Army Medical Corps will be held on January 26th, 1910, and following days. Candidates who are over the regulated limit of age at the date of the examination will be permitted to deduct from their actual age any period of service in the field after October, 1899, that they could reckon towards retired pay and gratuity, if such deduction will bring them within the age limit. Further particulars will be found in the advertising columns, but it may here be stated that applications to compete should be made to the Secretary, War Office, London, S.W., not later than January 17th, 1910.

INDIAN MEDICAL SERVICES.

PAY OF OFFICERS.

"ANOTHER OFFICER" writes: In my note on the I.M.S., published at p. 1202 of the JOURNAL for October 16th, there is one mistake, doubtless due to my bad handwriting. The military pay of a major of twelve years' standing is Rs. 650, not Rs. 750, giving a total pay and allowances of Rs. 800. The point I wished to bring out was that, even with the additional pay of a gaol, the pay of the civil surgeon is no more than that of the regimental doctor, while his duties are far more onerous.

If we take two captains, each with seven years' service, one in charge of a regiment, the other a civil surgeon with the charge of a small gaol, their pay will be identical:

Regimental medical officer, 500 grade + 150 staff = Rs. 650.
Civil surgeon, 600 pay + 50 gaol = Rs. 650.

The Regimental Medical Officer will go to his hospital about 8 a.m., and will easily finish his day's work in about an hour. In a large station he may have to take his turn as orderly officer, or be a member of various boards. Once a year he will go out to manœuvres with his regiment, but on the whole he has a fairly slack time of it.

The Civil Surgeon will start his day in the gaol. This will take him at least an hour—possibly two. He will then go to the main dispensary; the time he will spend there will depend on his professional keenness. In addition there probably will be a police hospital for him to visit. Then there will be his office work, directing the medical administration of his district, examining applicants for Government employ, of recruits for the police, or assault cases sent by the magistrates. Later in the day he may have to give evidence in court, attend a meeting of the municipality or district council, of which bodies he will find himself an *ex officio* member. Once a quarter he must visit and inspect all his branch dispensaries (varying from two to thirty in number), inspect the sanitation of all municipalities and large villages in his district. He is also expected to spend a certain number of days on tour in his district examining the vaccination and the sanitation of the villages and checking the vital statistics. In some provinces the vaccine lymph is prepared in the head quarter station under his supervision; in others it all comes from a central dépôt. Further, he is expected to do all medico-legal *post-mortem* examinations sent in to head quarters. In fact, in large districts it is often physically impossible for him to do the work expected of him. As to private practice, this seems to be rapidly diminishing amongst the natives, except in some of the senior stations. The general rule is for officials to pay 2 per cent. of their salaries for medical attendance on their families, but I think that most civil surgeons will agree that it is only junior men who have married young who do this. There is no gainsaying the fact that the regimental medical officer is well paid for the amount of work he does. On the other hand, the work of a civil surgeon is very interesting; living is cheaper on the whole than in a military station, and the position is far more independent. Provided he does his work, he can do it more or less when and how he likes.

Medico-Legal.

MEDICAL WITNESSES.

Evidence to Fact and Expert Evidence.

THE question whether a medical witness who attends a court on subpoena is bound to give evidence, whether his fees have been paid or not, is one which has frequently arisen. In the case of an ordinary witness to fact, it is clear that he is bound to attend every form of trial if his expenses are paid or tendered with the subpoena. The question is whether, if a practitioner is brought to the court as a witness to facts, and is then asked to give expert evidence, he can refuse to do so unless a proper fee is paid. In a case which was heard a short time back in the City of London, a consulting physician who had seen a patient at a hospital was subpoenaed, the sum of 1s. being paid to him as conduct money. When he entered the witness box and was sworn, he found that he was really being called as an expert. He thereupon refused to give evidence unless his fee of £1 1s. was paid. The judge, however, said that as he had come to court for 1s. he must answer such questions as might be asked of him. This case appears to bear out an opinion which was expressed recently in these columns. The question was whether, if a medical man is summoned to attend a police or assize court as a witness to give evidence as to facts, and he is there asked for an "opinion" on the matter in question, he can claim an expert's fee before giving the said opinion. The reply was:

> A medical witness can only raise a question as to his fees before being sworn. After being sworn he must answer all questions put to him which in the opinion of the judge are relevant to the cause being ied.

As another correspondent has recently challenged this answer as incomplete, it seems desirable to deal with the matter more at length. Two courses are open to the practitioner who is served with a subpoena to give evidence, but who is of opinion that a sufficient fee has not been paid or offered. He may attend the court, go into the witness box, and before being sworn lay the whole matter before the judge. If he can show that nothing more than his bare conduct money has been paid or tendered, it seems to be clear that the judge could not commit him for contempt if he were to refuse to answer any questions. In order to enable himself to take up this position, the practitioner should make it clear at the time of the service of the subpoena (which must be personal) that he will not go except for such and such an amount. He may feel bound to respond to the subpoena, but, if he does so, he should point out that he only attends under protest. In an old case, a witness being served with a subpoena did not object to the amount of the conduct money, but offered to bear his own expenses. Not having attended the trial, a rule *nisi* for an attachment against him was granted. It was held that, as he made no objection to the amount of the conduct money when the subpoena was served on him, it was not competent for him to avail himself of the insufficiency of the amount tendered as an answer to a rule *nisi* for an attachment.

The next point is to consider what may be the consequences of refusing to give evidence when such refusal is an assertion of a right. There are solicitors, not of the highest class, who are sometimes ready enough to exploit the services of unwary medical men, and he who would stand on his strict rights some day in open court would perform a real service to his professional brethren. The other course which may be adopted is to refuse absolutely to go to court unless proper fees are paid. This is undoubtedly the wisest plan, for if the case is a genuine one the fees will be paid, and probably more will be allowed on taxation than the witness has asked for; if the case is not genuine it is more than likely the practitioner will hear no more about it. A man who wrongfully refuses to attend on subpoena is, of course, liable to an action for damages, but the plaintiff in such an action must prove (1) that the witness was material; (2) that the trial could not safely proceed without him; and (3) that in point of fact the party has sustained some damage owing to his absence. The difficulties in the way of proving these points would not, as a rule, be very easily surmounted. To sum up, then, the best way of answering the attorney's clerk who appears with a subpoena is to say to him: "I shall not go until you pay my fee of £ ." If the medical man has reason to fear that he may be imposed upon, it would be safest for him to limit his claim to the exiguous fees allowed to witnesses by the scales in force in various courts, which are as follows:

(1) *In the High Court.*

If Resident in the Town where the Cause is Tried.	If Resident at a Distance from the Place of Trial.
£1 1s.	£1 1s. to £3 3s.

Note.—Travelling and hotel expenses to be added to the above. Special allowances are often made to experts. In a case heard in 1872 in Dublin £7 7s. a day was considered reasonable remuneration for a medical expert.

(2) *In the County Courts.*

	If Costs Taxed on the Lower Scale.	If Costs Taxed on Higher Scale.
	£ s. d. £ s. d.	£ s. d. £ s. d.
For qualifying to give evidence	1 1 0 to 3 3 0	1 1 0 to 5 5 0
Attending Court per diem	1 1 0 to 2 2 0	1 1 0 to 3 3 0

(3) *In Criminal Courts.*

According to regulations dated November 12th, 1903, there may be allowed to expert witnesses such allowances for attending to give expert evidence as the Court may consider reasonable, including, where necessary, an allowance for qualifying to give evidence.

MEDICAL PRACTITIONERS AS GRAND JURORS.

MEDICUS writes: Is there any law, written or unwritten, forbidding a medical magistrate from acting as a county grand juror? Our correspondent has been a county magistrate for ten years but has never been summoned on the grand jury.

*** There is nothing to prevent a medical magistrate from acting as a grand juror if properly summoned and *he desires to act* as such; but, if he has no such desire, he can claim exemption under Clause 35 of the Registration Act of 1858. The first part of this clause is as follows:

> Every person who shall be registered under the provisions of this Act shall be exempt, *if he shall so desire*, from serving on all juries and inquests whatsoever, etc., etc., etc.

VALUE OF SHARE.

INQUISITOR.—A. and B. are two practitioners in the same town, who have decided to amalgamate their respective practices, each taking a half-share of the combined practice. A.'s practice is worth £1,000 per annum, and B.'s £600. B. is to purchase his increase at the rate of one year and a half's purchase. What ought B. to pay?

*** If the details and figures are given correctly, it would appear that B. should pay A. £300.

ENGAGEMENT OF LOCUMTENENT.

MR. PERCIVAL TURNER (London) writes, as an agent of long experience in engaging locumtenents, that he does not accept the opinion expressed by an agent in a case reported under this head last week that it is the custom to act on a mere letter of inquiry. It is, he considers, the obvious duty of the agent, on being asked if he can send a locumtenent, to reply stating whether he can or not, and then to wait for definite instructions.

VALUE OF PRACTICE.

X. AND Y.—From the clause in the deed of sale it would appear that a partnership of at least three years was contemplated. If X. wishes to vary these terms he must come to an agreement with Y. No doubt two years' purchase for X.'s share would be a fair price, but it would not be unreasonable for Y. to object to pay so much at the present time, when he is a newcomer, and finds himself in the position of being compelled to buy a practice where he only contemplated buying a share in a partnership.

CLAIMS AGAINST ESTATE OF DECEASED PERSON.

NESTOR asks whether it is usual for the solicitors of a deceased person to put a notice in certain papers, asking for claims against the estate of the deceased, and repudiating liability if such claims be not sent within a specified date; and whether, if a claim were not sent in before that date, a debt could not be recovered. He further wishes to know, as in his experience claims sent to executors are seldom acknowledged, whether in cases where claims had been sent in the executors could deny having received them

*** It is usual for executors to put such notices in the public press, giving a reasonable time for claims to be sent in. If such a notice has been disregarded, and in the meanwhile the estate of the deceased shall have been lawfully administered, the claimant would probably be unable to enforce payment. It is unlikely that the executors would disregard a claim sent to them or to the relatives of the deceased. I our correspondent could prove that he had sent in such a claim in a prepaid letter to the address of the nearest relatives of the deceased, or that of his executors, or their solicitors, and the claim were ignored, the executors might be held personally liable for the amount of the claim.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

ONE'S DUTY TO ONE'S NEIGHBOUR.

F. R. T.—A patient has of course a right to choose her medical attendant. Our correspondent states that as soon as the misunderstanding was detected it was explained, and the patient given the opportunity of correcting her mistake. As she did not choose to do so, our correspondent would seem to be at liberty to attend her.

FEE FOR DISLOCATED SHOULDER.

M. R., who is attending a railway workman for a dislocated shoulder, asks what would be a fair fee to charge the company.

*** We are advised that a fee of two guineas would be a moderate and reasonable one.

Obituary.

THOMAS EVANS JONES, M.R.C.S., L.R.C.P.LOND., J.P.,

FORMERLY PRESIDENT OF THE NORTH WALES BRANCH, BRITISH MEDICAL ASSOCIATION.

WE regret to record the death on Wednesday, November 10th, in his 76th year, of Mr. Thomas Evans Jones, which took place at his residence, Henar, Llanrwst. Born at Trefriw, he was apprenticed to a neighbouring practitioner, the late Dr. W. E. Hughes, of Llanrwst, and subsequently studied medicine at the University of Edinburgh. He obtained the diploma of M.R.C.S.Eng. in 1860, and that of L.R.C.P.Lond. in 1863. On the completion of his studies he commenced practice at Llanasa in Flintshire, but about forty years ago removed to Llanrwst, where he soon acquired a large practice, and was highly respected and esteemed by rich and poor alike. He was of a very kind and genial disposition, yet a very strong man, for no influence or consideration could prevail upon him to turn out of the path of duty.

Mr. Jones was an antiquarian of great repute; he was President of the Vale of Conway Antiquarian Society, and a member of the Cambrian Archaeological Society. He possessed a splendid collection of Roman and other remains, as well as a large number of rare and valuable old books which he greatly treasured.

He took an active interest in the North Wales Branch of the British Medical Association, having filled the Presidential chair as far back as 1874, and he continued to be a regular attendant at the meetings until failing health prevented him.

In 1889 he was placed on the Commission of the Peace for Denbighshire, and had for some years been the Chairman of the local bench at Llanrwst. He continued to perform his magisterial duties regularly until a few weeks ago. For several years he took a keen interest in the Volunteer Force, and held a Commission as Surgeon-Captain in the Second Volunteer Battalion Royal Welsh Fusiliers.

Mr. Jones was the author of a treatise on *The Mineral Springs of Trefriw*, together with several articles on antiquarian subjects, and we are informed that he has written some valuable papers on local antiquities and genealogy which have not been published. Mr. Jones was a widower, his wife having predeceased him some two years ago.

The funeral, which was of a public character and very largely attended, took place at Llanrwst on November 14th.

HENRY LANGLANDS SPARK, M.D.EDIN.,

ASSISTANT SURGEON, ROYAL EYE AND EAR HOSPITAL, BRADFORD.

WE have to record with much regret the death, on November 12th, of Dr. Henry Langlands Spark of Bradford. He was only in the thirty-fifth year of his age, and until the occurrence of his fatal illness seemed destined to have a long and successful life. He was in full work up to within a fortnight of his death, which was due to a generalized attack of virulent pneumococcal infection. At one time he seemed to be shaking it off, but some thirty hours before the end, pericarditis supervened and the already weakened heart gave way. Dr. Spark was a student of Edinburgh University, where he had a distinguished undergraduate career, ending in 1901 with the degree of M.B., Ch.B.; some two years later he took the degree of M.D. He had been in practice in Bradford for some five years, his first connexion with the town commencing immediately on the termination of his student career, when he became one of the resident staff at the Bradford Royal Infirmary. A year later he moved to the Union Hospital as senior resident officer, and after two years' work at that institution commenced private practice in the Girlington district. It was one which even at that time by no means lacked in medical men, and to others than himself there did not seem to be any particular opening in it. Nevertheless, thanks to his personality and excellent professional qualities, he began to make his way from the beginning, and during the last two or three years had quite an excellent practice. He had also received appointment as assistant surgeon at the Royal Eye and Ear Hospital and had been appointed by the Bradford Guardians medical officer to the cottage homes and epileptic colony. His early selection for appointment to the staff of one of the principal hospitals of the town is sufficient proof in itself of the regard in which he was held by his professional colleagues. He enjoyed, indeed, a most excellent repute among them both as a colleague and as a physician. Comparatively young as he was, he showed his possession of that intuition which marks the born clinician and leads him to seize on the essential factors of a complicated case without apparent effort. Added to this, his methods were careful and his knowledge of the scientific side of his profession comprehensive. In private life Dr. Spark was a man of quiet and somewhat retiring habits; reading was his chief recreation and his chief friends were those who shared his literary tastes. Comparatively narrow as was the circle of his private acquaintances, he will nevertheless be greatly missed both in ordinary social life and in professional connexion.

Medical News.

THE King has been pleased to approve of the Polar Medal, with a clasp inscribed "Antarctic, 1907–9," being granted to members of the Shackleton Antarctic Expedition, 1907–9. Dr. E. Marshall is among the recipients of the medal in silver.

DR. THOMAS DE MELLO BREYNER, Physician in Ordinary to His Majesty the King of Portugal, has been appointed by King Edward an Honorary Commander of the Royal Victorian Order, on the occasion of the visit to Windsor of the King of Portugal.

EMERITUS PROFESSOR THOMAS PURDIE has offered to the University of St. Andrews the sum of £2,000 to provide the salary of an assistant in the Purdie Chemical Research Laboratory.

THE Symons gold medal of the Royal Meteorological Society has been awarded to Mr. William Napier Shaw, D.Sc., F.R.S., Director of the Meteorological Office, and Reader in Meteorology in the University of London.

MR. GEORGE H. LODGE L.R.C.P. and S.Ed., L.D.S., R.C.S.S., formerly Mayor, now Deputy Mayor of the borough of Rotherham, has been added to the Commission of the Peace for that borough.

SIR WATSON CHEYNE, Bart., C.B., F.R.S., and Dr. Purves Stewart have been appointed consulting surgeon and consulting physician respectively to the Central London Throat and Ear Hospital.

THE Liverpool medical students will hold their annual dinner in the Adelphi Hotel on Saturday, December 11th, at 7.30 p.m. Dr. J. Hill Abram will be in the chair and Mr. R. Craig Dun, F.R.C.S., in the vice-chair. It is hoped that as many post students as possible will be present at the dinner. Further particulars can be obtained from the Honorary Secretaries, Mr. John Campbell and Mr. R. H. Knowles, at the Medical School.

A METHOD of handling milk which presents some points of interest and novelty was described and demonstrated before a party of medical men on November 20th by the representatives of a new undertaking, the White Cross Creamery Company. The company has its working head quarters near the village of Knebworth, in Hertfordshire, and later on it is proposed to start other working centres in other of the home counties. Its distributing dépôt is in the West End of London. The milk is obtained from farms none of which are more than six miles from the factory, and it is calculated that within little more than half an hour of the time that it is drawn all milk will, as a rule, come under treatment at the factory, where it is at once placed in a centrifugalized machine in which dirt is collected in a central drum. The separated milk is afterwards maintained at 140° F. in an air-heated vessel, until it has been reduced in bulk to one-fifth of its original amount, filtered air being meantime continuously driven through it. The cream is treated in much the same fashion, but the insufflation of air is omitted, and any scum rising to the surface is constantly cleared away. Finally the milk and cream, both reduced in bulk, are mixed, the proportion which they then form to the original being one-fourth. The milk is then sent to the London dépôt, where, when intended for ordinary distribution, the 75 parts of water removed by the previous treatment are replaced by an equivalent amount of cold sterilized water. The result is a fluid claimed to have the ordinary taste of natural unpasteurized milk, and containing 3¼ per cent. of cream. At the same time, the treatment has, it is claimed, reduced its bacterial contents by some 99 per cent., while all pathogenic organisms, including tubercle, which it may have contained, have been destroyed. The aëration in the case of the separated milk, and the scumming in the case of the cream, are regarded as of special value, the forced aëration for at least two hours securing destruction of anaërobic organisms, and the scumming leaving any microbial life in the cream fully exposed to the action of the heat. The company states that the saving in the cost of transport due to the reduced bulk of the milk fully covers the expense of treatment. It also avers that the milk will be found to keep in perfect condition for from twelve to thirty-six hours longer than ordinary milk. The process has been devised by Dr. Campbell, of New York, and the statements as to its results are borne out by reports from Dr. Klein, F.R.S.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

THE offices of the British Medical Association and of the BRITISH MEDICAL JOURNAL are at 429, Strand, London.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SOME time ago the suggestion was made that a reserve of all men who had had any military service or training should be formed, but we do not recall that anything more has been heard of the proposal. If any correspondent has information on the point we should be glad to have it.

TREATMENT OF MUSCULO-SPIRAL RHEUMATISM.

TALBOT, a rheumatic subject, suffers from this variety for the first time. It resists all the internal and external remedies that have been tried. It is now fairly chronic. Putting on the coat is painful. Sleep is interrupted by intervals of pain in the course of the nerve. Golfing has become impossible. What special treatment can be recommended?

INCOME TAX.

I. T. has not made a return of his income for over fifteen years, but has taken the risk and paid the income tax assessed by the commissioners. He made a return this year of his total income from all sources in order to claim the reduction for earned income, and this showed that he was not entitled to the abatement of £120 that he had been allowed until last year. The collector now says he must make good the loss to the revenue, threatening penalties as an alternative. I. T. wishes to know whether the collector's statement is correct, and for how many years he should pay, and to what penalties he is liable.

*** The question of penalties under the Income Tax Acts is very complicated, and it is very difficult to pronounce an opinion without fuller information. The legal position is that the collector cannot recover any duties underpaid prior to the year ending April 5th, 1908, and his only resource would be by proceedings for penalty in case a penalty has been incurred *since* April 5th, 1908. It is not quite clear what our correspondent means by "this year." If for the years 1908–9 and 1909–10 the professional return has been made in due time and on the full amount of the liability to income tax, and there was no incorrect statement in the declaration of total income, it is probable that no penalty is now recoverable. If, on the other hand, there is anything wrong with the return or claim for either of those years, the Crown could proceed for penalties of £20, and treble the income-tax payable. It will be observed that no penalties are recoverable for years prior to April, 1908, but the powers of the Crown in respect of any subsequent default are such as to enable insistence on restitution for earlier years. It is, we believe, usual to accept the amount of duty underpaid during the previous six years in lieu of proceedings.

UNILATERAL PARALYSIS OF THE SPHINCTER IRIDIS AND OF ACCOMMODATION.

AESCULAPIUS describes a case in which there is unilateral paralysis of the sphincter iridis and of accommodation. The left pupil is much larger than the right and accommodation is greatly impaired. The patient is otherwise healthy, and there is no history of syphilis. Five years ago he had diphtheria. There is no history of injury before the onset of the trouble. He asks for advice as to treatment.

*** The case must necessarily be obscure in the absence of localizing symptoms. It is unlikely that the diphtheria is responsible for it, though if, as some hold, the paralysis following this disease is due to haemorrhage in the floor of the fourth ventricle, it may cause permanent injury. Paralysis has been known to follow influenza, but the most frequent cause is some nuclear lesion. It is a well known symptom as a forerunner of serious mental and nervous diseases, and this may occur years before any other symptoms become manifest. The possibility that a patient, especially if a woman, is using atropine or some form of belladonna to the eyes must never be forgotten; such cases are by no means infrequent. Electricity is unlikely to be of any service whatever, though the application of the interrupted current of such a strength as could be comfortably borne would certainly do no harm. A suitable convex lens would assist reading, and should be worn, but its strength will depend upon the refraction of the

eye, and should be about 4 added to any refractive error. Strychnine, etc., may be given. The prognosis probably is not good, for it is rather to be anticipated that some grave nerve lesion will become manifest sooner or later. The possibility of the patient using some drug to the eye should, however, be most carefully excluded, for more cases are due to this cause than to any other.

ANSWERS.

TREATMENT OF RAYNAUD'S DISEASE.

DR. W. J. MIDELTON (Bournemouth) writes: A. H. B. would find small doses of thyroid extract useful in the treatment of Raynaud's disease.

TREATMENT OF OSTEO-ARTHRITIS.

DR. W. J. MIDELTON (Bournemouth) writes: "Bulldog" (BRITISH MEDICAL JOURNAL, November 13th, 1909) would find useful the treatment recommended in the work on *Pathology and Treatment of Rheumatoid Arthritis*, by Dr. P. W. Latham (Deighton Bell and Co, Cambridge). The galvano-cautery also affords relief in such cases, but is not so efficacious in the direction of cure. I have long ago come to the conclusion that drugs, baths of various kinds, hot air, etc., are mere palliatives except in early and mild cases.

ASYLUM SERVICE IN ENGLAND.

F.—(1) and (2). There are now about 95 medical superintendents of county and borough asylums in England and Wales, and 14 superintendents of registered hospitals (not including idiot institutions). The number of assistant medical officers is about 300. Vacancies due to the retirement or death of superintendents do not average more than four or five annually, so that opportunities for promotion are necessarily few. There are, however, greater chances of a junior assistant medical officer becoming a senior medical officer in a brief period. (3) The advantages of asylum medical service were the certainty (without expenditure of capital) of a salary of from £150 to £250 per annum with board, rising in large asylums to £300 to £400 for senior assistants, and the prospect, if fortunate, of a superintendency, with salary ranging from £600 to £1,100 a year with comfortable house and certain emoluments, with the prospect of a pension after a certain age and period of service, the amount of which it is hoped will shortly be assured by law. On the other hand, there is abundance of routine work, amidst, to some temperaments, depressing surroundings; and no one whose nervous and mental heredity is not quite sound should seek to enter the service. To one with qualifications and tastes for scientific research, an asylum career offers opportunities, especially in the earlier years of office; and, as regards recreations, there is exceptional scope for the musician and the athlete.

LETTERS, NOTES, ETC.

THE CAUSATION OF APPENDICITIS.

DR. G. SHERMAN BIGG (London, S.W.) writes: Every practitioner has probably seen a large number of cases of appendicitis in which after operation a doubt has existed whether the removal were a necessity. I have for a long time entertained a strong bias against the bacterial infection theory, believing it to be unsound, and have looked on the kinking explanation as too frequently an excuse for the justification of the operation. I have further observed that the area of inflammation was so very small, and presented the appearance of a tiny excavation. Reasoning by analogy, I suggest that what actually occurs is, that a concretion, similar to what is frequently seen in the tonsils of children and adults, is formed *within* the appendix, and that this small lump excites inflammation and even causes ulceration. I do not claim to be an expert anatomist, but I am under the impression that the opening from the appendix is an oblique and not a straight slit, and consequently, under normal conditions, the lodgement of any foreign body from without is impracticable, and can only take place when the opening is dilated, especially as the flow of the natural secretion is from the appendix towards the bowel. Further, the dilatation of the tube is the cause of appendicular colic.

CHRISTIAN SCIENCE AND SUGGESTION.

MR. FREDERICK DIXON (London) writes: Will you allow me to protest once more against the suggestion of Mr. Paget, resuggested by Dr. Torrance Thomson, that healing in Christian Science is accomplished by means of suggestion. Christian Science, whatever any one may think about it, is the adopted religion of a vast army of men and women of every conceivable class, profession, and temperament. It contains in its ranks an enormous percentage of cultivated thinkers, and the day has gone by for ever when it is possible to ignore it. Now, to understand any teaching intelligently it must be studied intelligently, and it is not an intelligent study of any system to ignore the denials and protests of those who are practising it, and to explain it on a principle convenient to the critic's own theories and systems of thought. There are numbers of Christian Scientists who studied the various phases of hypnotism long before Christian Science was known to them. To tell these people, consequently, who know exactly what hypnotism is and what Christian Science healing is, that the two are the same thing is practically to insist that those who have studied Christian Science most carefully are the least capable of pronouncing an opinion on it.

Christian Science heals through a denial of the very process by which mental suggestion works. And healing in Christian Science is not confined to the destruction of sickness and disease, but extends to the destruction of all that is inharmonious in life, or as a Christian Scientist would say, to all that is unlike God. It does not, *pace* Mr. Paget, ignore animals, it ignores nothing, not even lower organisms or what is termed inanimate matter, for it knows that every material phenomenon, in the words of Mrs. Eddy, on page 70 of *Science and Health*, "from a blade of grass to a star," is only the counterfeit of some spiritual identity, which the divine Mind maintains "distinct and eternal." Throughout every moment of the day and night Christian Scientists are facing the problem of the inharmony in phenomena, founded on a belief in the supposititious power of evil. Facing it and conquering it, not by any ridiculous system of suggestion, but precisely in proportion as success is attained in the effort to "let that mind be in you, which was also in Christ Jesus," for the mind of Christ is that which makes it possible to separate the absolute from the relative, the real from the unreal. Christ Jesus, in the words of Mrs. Eddy, on page 313 of *Science and Health*, "was the most scientific man that ever trod the globe. He plunged beneath the material surface of things, and found the spiritual cause." Does any intelligent human being suppose that He healed the sick, raised the dead, walked on the water, stilled the tempest, and fed the multitude by mental suggestion? The critics know that this is ridiculous, and therefore escape from the dilemma by the suggestion that He did these things as God, in calm defiance of His own repeated assertion that "He that believeth on Me, the works that I do shall he do also." The true explanation of the teaching of Christ Jesus is contained in *Science and Health*, and when people cease to criticize their own conception of that book and read it, with an open mind, in conjunction with the Bible, they will begin to understand the process by which Christian Science healing is effected, and to see that it represents not a suggestion of the human mind, but what one of the greatest of translators has termed, with reference to the eighth chapter of Romans, "Righteousness Triumphant." For here is his translation of the passage in question: "All creation is expectant, waiting for the revealing of the sons of God. Subjected to unreality, not of its own will, but for the pleasure of him who so subjected it, creation waits in hope that it shall itself be emancipated from its servitude to decay, and shall attain to the independence inseparable from the glory of the sons of God."

THE "PATIENT."

"I wish you'd come more quickly, Nurse,
I've had to call you twice.
I think I must be getting worse,
My legs are just like ice.

"Please run downstairs and tell those boys
It really is too bad;
Good gracious! stop that snuffling noise,
It almost drives me mad.

"Although it's nearly half-past three
The doctor's not been yet;
A more neglectful man than he
I'm sure I've never met.

"This room's too hot; the sun's too strong;
Why don't you draw the blind?
I think your silence very wrong,
And dreadfully unkind.

"The pains I suffer in my back
Would make an angel weep.

* * * *

For mercy's sake do stop that clack;
I want to go to sleep!"

CHARLES VIVIAN.

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THE BRITISH MEDICAL ASSOCIATION.
THE BRITISH MEDICAL JOURNAL.

The British Medical Association, established in 1832, exists for the promotion of medicine and the allied sciences, and the maintenance of the honour and interests of the medical profession.

The British Medical Journal, published by the Association for the increase and dissemination of medical knowledge and the discussion of scientific, political and social questions affecting the medical profession, has gained an important circulation throughout the world, and is one of the chief means by which the clinical and scientific work accomplished by British workers is brought to the knowledge of the profession in foreign countries.

The Divisions and Branches of the British Medical Association established throughout the United Kingdom and in most other parts of the British Empire, hold periodical meetings, and a General Meeting of the Association, which all members are entitled to attend, is held once a year. All the proceedings, scientific, clinical, and medico-political, of the Annual General Meeting are promptly reported in The British Medical Journal, and an Epitome of Current Medical Literature, devoted mainly to analyses of foreign medical publications, is published weekly. For the convenience of members, the proceedings of the Association, including those of its Divisions and Branches, relating to medico-political and administrative matters are collected in a Supplement, which forms a part of each weekly issue of The British Medical Journal.

The British Medical Journal, while not neglecting to record the progress of the sciences of physiology, pathology and bacteriology, to the advancement of which the Association annually allots a sum of over £1,000 in Research Scholarships and Grants, is mainly devoted to practical and social medicine, and publishes in every number clinical lectures, essays, addresses, and reports, the majority of the latter being short notes from general practice, the value of which is recognised not only at home, but abroad, being frequently quoted in foreign medical publications.

The British Medical Journal is forwarded weekly, post free, to every member of the British Medical Association wherever he may reside. The annual subscription to the Association is twenty-five shillings. Every medical practitioner who is registered in the United Kingdom, or who, being resident elsewhere in the British Empire, possesses recognised medical qualifications, is eligible to be elected a member of the British Medical Association.

If resident in the United Kingdom or any other part of the Empire where there is a Branch of the Association, a candidate for election should apply to the Honorary Secretary of the Branch, or if resident in a district where there is no Branch, to the Financial Secretary and Business Manager, 429, Strand, London, W.C., who will in all cases supply the necessary form and other information.

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It is the custom to publish in each issue of The British Medical Journal, in addition to numerous clinical papers, one or more clinical lectures or addresses on clinical subjects. Among those for the publication of which during 1910 arrangements have already been made, are the following :—

ON PNEUMONIA, by WILLIAM OSLER, M.D., F.R.S., *Regius Professor of Medicine, Oxford.*

ON PLEURAL EFFUSION, by SIR THOMAS OLIVER, M.D., F.R.C.P., *Physician Royal Victoria Infirmary, Newcastle-on-Tyne ; Professor of Physiology University of Durham.*

ON MENTAL AND CARDIAC STRAIN, by SIR LAUDER BRUNTON, M.D., F.R.S., *Consulting Physician to St. Bartholomew's Hospital.*

ON DISEASE OF THE HEART AND CIRCULATION and ON THE TREATMENT OF DYSPEPSIA, by DAVID DRUMMOND, M.A., M.D., *Senior Physician Royal Victoria Infirmary, Newcastle-on-Tyne, and Joint Lecturer on the Principles and Practice of Medicine in the University of Durham.*

ON THE CHARACTER OF FLUIDS WITHDRAWN FROM THE PERITONEAL SAC IN CASES OF ASCITES AND OTHER ACCUMULATIONS, by R. G. HEBB, M.D., F.R.C.P., *Physician to the Westminster Hospital, Consulting Pathologist Queen Charlotte's Hospital.*

ON RHEUMATISM AND RHEUMATOID CONDITIONS, by CHARLES J. MACALISTER, M.D., *Lecturer on Clinical Medicine University of Liverpool, and Honorary Physician and Lecturer on Practical Medicine Liverpool Royal Southern Hospital.*

ON INJURIES OF THE HEART, by J. BLAND-SUTTON, F.R.C.S., *Senior Surgeon Chelsea Hospital for Women, Surgeon and Lecturer on Surgery Middlesex Hospital.*

ON THE USES OF COLCHICUM, by G. A. GIBSON, M.D., F.R.C.P., *Physician Royal Infirmary, Edinburgh, Consulting Physician Deaconesss Hospital.*

ON SOME POINTS IN THE SURGERY OF THE BRAIN, by SIR VICTOR HORSLEY, F.R.S., F.R.C.S., *Surgeon to the National Hospital for the Paralysed and Epileptic, Queen Square.*

ON THE CEREBELLUM AND ITS AFFECTIONS, being the Lettsomian Lectures, by J. S. RISIEN RUSSELL, M.D., F.R.C.P., *Physician University College Hospital.*

ON ANOREXIA NERVOSA, by W. HALE WHITE, M.D., F.R.C.P., *Senior Physician Guy's Hospital.*

ON NERVE STORMS, by GUTHRIE RANKIN, M.D., F.R.C.P., *Physician Seamen's Hospital Society, and Royal Waterloo Hospital for Children and Women.*

ON THE TREATMENT OF TYPHOID FEVER, by F. J. SMITH, M.D., F.R.C.P., *Physician and Senior Pathologist London Hospital.*

ON THE TREATMENT OF CANCER OF THE ŒSOPHAGUS, by W. ARBUTHNOT LANE, M.S., *Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond Street.*

ON SOME POINTS IN DISEASES OF THE STOMACH, by CHARLES BOLTON, M.D., M.R.C.P., *Assistant Physician University College Hospital.*

ON THE SURGICAL TREATMENT OF GASTRIC ULCER AND THE COMPLICATIONS OF ULCER, by KEITH W. MONSARRAT, F.R.C.S. ED., *Surgeon to the Northern Hospital, and Lecturer on Clinical Surgery University of Liverpool.*

ON THE EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH, by C. W. MANSELL MOULLIN, M.D., F.R.C.S., *Senior Surgeon London Hospital.*

ON DUODENAL ULCER, by A. F. HERTZ, M.D., *Assistant Physician and Physician in Charge Electrical Department Guy's Hospital ; Demonstrator in Morbid Anatomy Guy's Hospital Medical School.*

ON APPENDIX DYSPEPSIA, by B. G. A. MOYNIHAN, M.S., F.R.C.S., *Surgeon Leeds General Infirmary.*

ON THE DIAGNOSIS OF ACUTE INTESTINAL OBSTRUCTION, by H. BETHAM ROBINSON, M.D., M.S., F.R.C.S., *Lecturer on Practical Surgery St. Thomas's Hospital ; Consulting Surgeon East London Hospital for Children.*

ON THE SURGERY OF THE HEPATIC AND COMMON BILE DUCTS, WITH NOTES OF A SUCCESSFUL CASE OF HEPATICO-CHOLEDOCHOSTOMY, by J. LYNN THOMAS, C.B., F.R.C.S., *Surgeon Cardiff Infirmary.*

ON THE TREATMENT OF INGUINAL HERNIA BY OPERATION, by C. YELVERTON PEARSON, F.R.C.S. Eng., M.D.R.U.I., *Surgeon Cork North Infirmary, Professor of Surgery Queen's College, Cork.*

ON THE TREATMENT OF CHRONIC NEPHRITIS, by ALFRED G. BARRS, M.D., F.R.C.P., *Honorary Physician Leeds General Infirmary, Professor of Medicine University of Leeds.*

ON SEPTIC PYELITIS AND PYELONEPHRITIS, by W. P. HERRINGHAM, M.D., F.R.C.P., *Physician and Lecturer on Forensic Medicine, St. Bartholomew's Hospital, and Consulting Physician Paddington Green Children's Hospital.*

ON URÆMIC RASHES, by H. D. ROLLESTON, M.D., F.R.C.P., *Senior Physician St. George's Hospital, Physician Victoria Hospital for Children.*

ON URETHRAL CALCULI. A REVIEW OF THE METHODS EMPLOYED FOR THEIR REMOVAL, WITH NOTES OF TWO SUCCESSFUL CASES OF TRANSPERITONEAL URETERO-LITHOTOMY, by SINCLAIR WHITE, M.Ch., F.R.C.S., *Senior Hon. Surgeon to the Royal Infirmary, and Lecturer on Surgery in the University of Sheffield.*

ON SUGGESTIONS CONCERNING THE RELATIONS OF TUBERCLE, SYPHILIS, AND MALIGNANT DISEASE, by J. RUTHERFORD MORISON, F.R.C.S., *Senior Surgeon Newcastle-on-Tyne Royal Victoria Infirmary.*

ON TUBERCULOUS DISEASE OF JOINTS, by F. C. WALLIS, F.R.C.S., *Surgeon to Charing Cross Hospital.*

ON RADIUM: SOME OF ITS PHYSICAL AND THERAPEUTIC PROPERTIES, by J. MACKENZIE DAVIDSON, M.B., C.M., *Medical Officer in Charge Röntgen Ray Department, Royal London Ophthalmic Hospital, and Consulting Medical Officer X-Ray Department, Charing Cross Hospital.*

ON THE SURGICAL TREATMENT OF CERTAIN CASES OF GLYCOSURIA, by A. W. MAYO ROBSON, F.R.C.S., *Emeritus Professor of Surgery University of Leeds; Honorary Surgeon Dreadnought Hospital.*

ON ELASTIC TRACTION IN SURGERY, by G. A. WRIGHT, F.R.C.S., *Surgeon Manchester Royal Infirmary, Consulting Surgeon Hospital for Children, Pendlebury; Professor of Surgery University of Manchester.*

ON DERANGEMENTS OF THE KNEE, by ROBERT JONES, F.R.C.S. Ed., *Honorary Surgeon Royal Southern Hospital, and Surgeon Liverpool Country Hospital for Children.*

ON A TRAUMATIC CAUSE OF CHRONIC MASTITIS, by G. LENTHAL CHEATLE, C.B., F.R.C.S., *Surgeon King's College Hospital.*

The Annual Meeting for 1910 will be held in London. In addition to the address of the President, Mr. Butlin, and the addresses in Medicine and Surgery, and the proceedings of the Annual Representative Meeting, which begins on Friday, July 22nd, full reports of the meetings of the Sections will be published in The British Medical Journal at an early date after the meeting. There will be on this occasion twenty-one Sections, as follows:—Anæsthetics; Anatomy; Bacteriology; Dermatology; Diseases of Children; Gynæcology and Obstetrics; Laryngology; Medical Sociology; Medicine; Naval, Military and Ambulance; Odontology; Ophthalmology; Otology; Pathology; Pharmacology and Therapeutics; Physiology; Psychological Medicine with Neurology; Radiology and Medical Electricity; State Medicine; Surgery; Tropical Medicine.

The membership of the British Medical Association is twenty-one thousand. The circulation of The British Medical Journal is between twenty-four and twenty-five thousand a week; it reaches every part of the British Empire and every civilized country in the world.

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